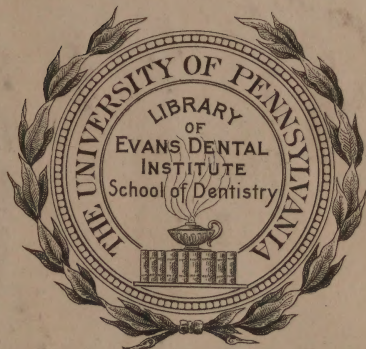


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GIFT OF
EDWARD C. KIRK

THE



DENTAL QUARTERLY:

DEVOTED TO THE INTERESTS

OF

DENTAL SCIENCE.

Vol. I.

MARCH, 1862.

No. I.

PHILADELPHIA:

JOHNSON & LUND, PUBLISHERS,

No. 27 NORTH SEVENTH STREET.

THE DENTAL QUARTERLY.

VOL. 1.

PHILADELPHIA, MARCH, 1862.

No. 1.

TO THE PROFESSION.

This work will be issued as the title indicates—quarterly. Although comparatively of limited size, its expansion will be commensurate with its success. One advantage which it will possess is, that it will form in part a synopsis of the more frequent publications, thereby rendering matter more condensed and convenient. It no doubt appears to some, that there are enough works of this character already, but we are of opinion that the more numerous they are, the better; though many ideas will be repeated and reiterated by one and another, yet new suggestions are continually elicited; and in proportion to our acquaintance with science—unlike many other studies—does the interest and pleasure increase, instead of flag and diminish. No one can estimate his resources until he calls them into requisition. One sometimes feels satisfied that his knowledge of a subject is full and correct, but when he comes to treat of it he finds his presumption far in advance of his information. By familiarity with a subject, we almost unconsciously analyze and form conclusions with as little labor as we would describe a piece of old household furniture. Quickness of perception and promptness of action are capabilities required by the dentist next to the physician: and we think that these qualifications may be improved by a liberal interchange of experience and opinion through the medium of journalism. If the *Quarterly* should prove a useful tributary to the rapidly swelling stream of dental literature, it will have accomplished all that its projectors anticipated.

ANESTHETICS.

The application of anesthetics to the minor operations of Dental Surgery is highly commended by many, while some utterly condemn it, and others appear entirely indifferent to it. There are many cases in which we think the use of these agents highly beneficial. The pain experienced by the extraction of a tooth frequently makes

a deeper impression upon the nervous system than the anesthetic agent. In the latter case, the stroke is not so heavy, and the desideratum obtained—the absence of pain. Several deaths have resulted from the extraction of teeth; doubtless occasioned by an overwhelming shock; but we have yet to learn of a single instance, where the judicious exhibition of ether or chloretic ether have produced fatal consequences. The timidity of some persons makes them martyrs to their fears. What are a few hours of languor and depression, following a short period of excitement, compared with many days of physical and mental anguish, and nights of dreamy restlessness, occasioned by suspense and delay. We have heard women exclaim in an agony of dread that they would rather endure the pangs of labor than submit to the extraction of a tooth. Would it not be an act of humanity to indulge a poor nervous creature, rather than send her away to seek relief of some one with whom she is unacquainted—in whom she has little confidence? though it may give the office a disagreeable odor—interfere with other engagements, or be so *very* troublesome. The indifference which some manifest, no doubt arises from ignorance of the nature and effects of such agents, or the fear of difficulties resulting from the hallucinations to which the patient is frequently liable while under their influence. All that we think necessary to avoid suspicion or stifle accusation, is the presence of a reliable third person, as assistant. Had this precaution been taken by some operators, they would not have been placed in awkward or perilous positions. The monstrous phantasms which sometimes possess the mind are both extremely ludicrous and distressing; but these emphatic expressions of sentiment, or frequent bubblings of passion, claim but little consideration, as they are generally forgotten as soon as they are over. They may be regarded as nothing more than mordant humor, which is witnessed every day in our streets. That these fallacies and vagaries of insults, outrages, thefts, &c., should receive unqualified credence from persons who lay claim to a considerable share of intelligence, is surprising, when we reflect that Sulphuric Æther and Nitrous Oxide, (laughing gas,) have for years been used in private parlors and public halls as a source of pleasure and merriment. It is patent to any one acquainted with the use of them, that the power of speech and motion is unsuspended so long as consciousness remains; yet the statement to the contrary, made by a female in this city, was taken as evidence, and consigned a respectable dentist to the dull shades of Moyamensing prison. These opium dreams, these fog-born tales, more flimsy far than e'er were told by any straw-crowned king of bedlam to listening madmen. Alas! for human stupidity. S. H. C.

THE VULCANITE—NOVEMBER.

"REFINING, ALLOYING AND WORKING GOLD.—As many members of our profession are located remote from dental depots, or from persons versed in working the precious metals, a practical knowledge of the most simple manner of refining scraps and filings may be of advantage, not only in a great saving in a pecuniary point of view, but in a uniformity in the quality of the gold, and consequently a better result will obtain. Much of the gold plate used by dentists in the United States is quite too inferior in quality for the health of the patient, as well as being less durable, much more liable to crack or split, both by swaging and by use in the mouth. Gold 20 carats fine possesses greater strength, is easier adapted, and will retain its shape better while soldering, and preserve its color longer than when a lower quality is employed; and it is cheaper when the dentist works his own plate from coin, costing less than ordinary plate at 90 cents per dwt. Take four American five-dollar gold pieces and one gold dollar, which will make a little over 21 dwts., add 2 dwts. pure copper and 1 dwt. pure silver, melt in a new crucible, the inside being previously well rubbed over with borax. Care should be taken not to carry the heat too high on new metals, as the difference in the specific gravity of the three metals is so great as to separate them under a too high degree of heat; when the metal boils or assumes a rotary or revolving motion in the crucible, it may be poured into the ingot moulds, previously heated to a sissing heat and oiled with olive oil. Gold is always tougher and of a finer texture for repeated hammering and annealing before being rolled into plate. All the tools employed in working gold should be highly polished, and entirely free from dirt, dust, or rust spots. Too great care, in this respect, cannot be exercised; the gold should be often annealed by carefully heating to dark-red heat, and, while slightly hot, plunged into strong muriatic acid, then thoroughly washed with clean warm water, and the surface is to be well rubbed over with very fine sand, and wash again. This should be repeated each time the gold is annealed, the object being to free the surface from all impurities. Solder for this quality of gold may be made by taking 18 parts of the scraps or cuttings from the plate, four parts pure silver, and two parts fine brass wire or English solid-headed pins; melt the gold and silver first, and then add the brass wire or pins, and pour same as for gold.

"All gold or silver solders should be wrought out free from cracks, if possible, and with the same care as if it were intended for plate or springs; if solder cracks in working or is over-refractory, it will not make strong or pleasant-flowing solder; it had better be melted over. Solders may be made for any quality of gold by employing the above formula—using pieces of the plate to be soldered, and alloying as above. Small quantities, from one to five dwts., may be melted on a piece of charcoal with a common mouth blow-pipe; and while in a state of fusion, quickly press the molten mass with the flat face of a hammer—this chills the solder, rendering annealing necessary before any attempt is made at working it.

"Gold containing zinc, lead, tin, or copper, may be refined by melting in a clean crucible; and when quite hot, (nearly a white heat,) throw into the crucible a little finely-pulverized saltpetre and borax, keeping the metal at a high heat, and repeating the application of the saltpetre and borax at intervals of ten or fifteen minutes for an hour or two; then pour into the ingot moulds, (heated and oiled;) then break up the ingot, and place it in a clean crucible well rubbed inside with borax, and when melted, add as much corrosive sublimate as will lie on a five-cent piece; continue the heat for thirty minutes, and pour as before directed. If the gold is still refractory, repeat the refining process till it will work; twice heating is generally sufficient; remember, the heat before pouring into the ingot mould should only be a bright red, and not a white heat. Filings should never be first melted with scrap gold; when filings are to be melted and refined, first pass a magnet many times through them to remove all the iron or steel, then place them in a glass or earthen dish, and cover them with strong nitric acid, for one hour or more; this will dispose of any silver or brass they may contain; pour off the acid; the silver in solution may be precipitated with common salt, (forming a chloride,) or the acid evaporated by gentle heat; the silver can then be melted in a crucible with a little sal ammoniac in fine powder. The filings are to be washed with water, and mixed with a solution of borax rubbed to the consistency of cream, and placed in a crucible, the inside of which has been well coated with borax, and placed over a moderate fire at first, and, when melted, a little saltpetre added, and otherwise treated the same as when refining scraps; filings should be remelted if necessary, till the ingot is soft and tough, before adding scrap gold with it; they may then be melted together and worked into plate. The best silver plate for dental use is made from pure silver (not coin) and from five to eight per cent. of platinum, melted together; the texture of the plate is fine, and any degree of stiffness may be imparted to it by varying the quantity of platinum. Good silver solder may be made by adding to one ounce of pure silver fifty medium-sized English solid-headed pins, melting together at a bright red heat, and poured into the ingot moulds, and worked into a plate about No. 26, common guage; the solder should be annealed often at a low heat while working, and, before using, the surface rubbed with fine sand. No more solder should be cut into small pieces than is wanted at the time, as either gold or silver solder cut into small pieces presents double the surface to atmospheric action; and the freer from oxydation and the brighter and cleaner the surface of all solder is when used, the more perfect will it flow, and is correspondingly stronger and more compact, and the union of the parts firmer. Gold spring-stuff may be made by melting together fine gold 100 parts and platinum 10-16 or 18 parts, according to the amount of spring required; it should be carefully hammered and annealed often while working, so as to prevent any fine checks on any part of the surface; however small the checks, they weaken the spring, and it ultimately fails at these points."

ARTIFICIAL TEETH.

TO DENTISTS.

In presenting the following credentials, we return our sincere thanks to those members of the Profession from whom they were received. It is needless for us to comment upon the excellence of our Artificial Teeth, as the following testimonials attach to them all the qualities that could be desired by Dentists in the United States and Europe. We solicit a careful perusal of them.

Yours truly,

JOHNSON & LUND.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's; having used nearly all others.

JOHN L. CLARK.

Waterloo, N. Y., October 29, 1861.

Messrs. JOHNSON & LUND:

Gentlemen—Having used your Teeth in my practice for the past year, and finding them *superior* to all others in *beauty, natural appearance* and *durability*, I hereby cheerfully add my humble testimonial in their favor.

Yours respectfully,

B. F. CLARK.

Flint, Michigan, Nov. 18, 1861.

I have used Teeth of the different manufacturers of Philadelphia of ten years past, and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their resemblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blowpipe, show that the proportions of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN.

Philadelphia, December 20, 1861.

This is to certify, that we have used the Teeth of Johnson & Lund of Philadelphia, and think them superior to all others in use.

CONKEY & LELLEN.

Elmira, N.Y., Sept. 9, 1861.

The Teeth of Messrs. Johnson & Lund's manufacture I am using in my practice, and can find no fault with them.

G. B. BROWN.

Danville, Pa., Dec. 19, 1861.

This is to certify, that I have used the various and most of the different manufacturers' teeth for the last eight years, and now give to Johnson & Lund's the choice; deeming them as combining the most desirable qualities looked for in artificial teeth: such as naturalness of color, shape, symetry and beauty of arrangement, comeliness of expression in the mouth and strength and firmness for use.

R. WALKER.

Owego, N.Y., Oct. 1, 1861.

We find Johnson & Lund's Teeth a superior article, and are better satisfied with them than those of any other make which we have used.

JOHNSON & SNOW.

Hornellsville, N.Y., Oct. 24, 1861.

This is to certify, that I have bought of Dr. M. Frank, Johnson & Lund's Teeth, and consider them, without exception, the most beautiful I ever saw.

S. B. HYATT.

Lock Haven, Pa., Dec. 16, 1861.

Having used Johnson & Lund's Teeth for the last year, I find them to be all they recommend them to be, for strength, durability and adaptation to all the various uses met with in our practice.

N. B. LAUNY.

Corning, N.Y., Sept. 27, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund of Philadelphia, and am happy to say that they are superior in every particular to any in use.

A. H. MATSON.

Homer, N.Y.

Messrs. JOHNSON & LUND:

Gentlemen—I am in receipt of you second lot of teeth; they are life-like and beautiful. Your teeth *stand fire well*.

Yours truly,

W. A. CHITTENDEN.

Scranton, Pa., Dec. 21, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund of Philadelphia, and consider them equal in every respect to any I have ever used, and very cheerfully recommend them to the profession.

F. H. GUIWITS.

Avoca, N.Y., Dec. 13, 1861.

Having used Johnson & Lund's Teeth to my perfect satisfaction, I would earnestly recommend them to Dentists in search of a superior article, and one that will always please.

S. F. BREMAIN,
(Of the Firm BREMAIN Bro's.)

Rome, N. Y., Nov. 12, 1861.

I have used artificial teeth of the different manufacturers of this country, and do honestly believe Johnson & Lund's to be superior to all others in the various necessary and indispensable qualities desired by the Dental profession.

H. M. SHEERAR.

Wellsville, N. Y., Oct. 24, 1861.

Having used the Teeth made by Johnson & Lund, (M. Frank, Agent,) I take pleasure in recommending them as equal to any teeth I have used for the rubber work.

A. N. PRIEST.

Utica, N. Y., November 13, 1861.

MESSRS JOHNSON & LUND:

Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers: they are very much admired, particularly by the ladies, for their beauty and natural appearance in the mouth.

Yours respectfully,

E. C. KESTER.

Danville, Pa., December 19, 1861.

DENTISTS!—If you want a strong and natural looking artificial tooth, use the teeth manufactured by Johnson & Lund, of No. 27 North Seventh Street, Philadelphia, Pa.

Yours professionally,

L. D. EVELAND.

Milton, Pa., December 18, 1861.

Philadelphia, November 25, 1861.

MESSRS. JOHNSON & LUND:

Gentlemen—You ask me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The *beautiful shape*—the *life-like* and *natural* shades and their *strength* under the *blowpipe* and *hammer* render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth deserves the thanks and substantial support of the dental profession. Wishing you success, I remain

Yours truly,

M. LUKENS LONG.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession as a *decidedly superior article*.

F. O. HYATT.

Cortlandville, N. Y.

Messrs. JOHNSON & LUND :

Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*
Ithaca, N. Y., November 7, 1861. A. H. FOWLER.

Ithaca, N. Y., Nov. 7, 1861.

We have used in our practice for sometime past teeth manufactured by Messrs. Johnson & Lund, and can speak highly of them in every respect.
 BARTLETT & HOYSTRADT.

Lockport, N. Y., Oct. 17, 1861.

I have used teeth manufactured by Johnson & Lund, of Philadelphia, and like them much. Their color and shapes are admirable.
 W. BRISTOL.

Philadelphia, December 7, 1861.

Permit us to say that your Artificial Teeth are excellent: they must eventually find their way into every dentist's laboratory throughout the country.
 C. BENESOLE & SON.

Medina, N. Y., October 17, 1861.

Having used *Artificial* Teeth of the various manufacturers, and having had occasion to use those manufactured by Johnson & Lund, we can speak of them in the *highest terms* as to *strength, beauty* and *adaptability* to the various styles required in artificial dentures. Their appearance in the mouth is natural and life-like.

A. V. BELDING & SON.

I use Johnson & Lund's make of Artificial Teeth and can recommend them as being perfect in every particular; they give *complete satisfaction* and leave nothing further to be desired.

J. M. BARRETT.

Wilkesbarre, Pa.

Messrs. JOHNSON & LUND :

Gentlemen—I have used your Teeth for some time and consider them fully equal, if not superior, to any others manufactured.

Yours respectfully, E. SHELP.

Wilkesbarre, Pa., December 25, 1861.

Having inserted a number of Teeth manufactured by Johnson & Lund, it gives me great pleasure to recommend them to all dentists for their unsurpassed natural and life-like appearance, being satisfied that they stand the action of the fire and blowpipe as well, if not better, than any manufactured.

AMBLER TEES.

1700 Vine Street, Philadelphia.

I have used Johnson & Lund's Artificial Teeth and believe that they combine all the qualities required by the Dentist in a higher degree than those of any other manufacturer.

P. B. MERWIN.

Delhi, N. Y., October 7, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and think them exceedingly beautiful and life-like.

HARRISON STICKER.

Milton, Pa.

Having used a variety of Teeth prepared by different manufacturers, I cheerfully give my preference to Johnson & Lund's; believing them to combine more excellencies with fewer defects than those of any other manufacturer.

W. H. WOOD.

Cuba, N. Y.

I have been shown samples of Gum Teeth manufactured by Johnson & Lund of Philadelphia, and think them exceedingly beautiful and life-like.

GEO. E. HAYS.

Buffalo, N. Y., October 21, 1861.

Messrs. JOHNSON & LUND:

Sirs—I have used your Teeth of all kinds, and find them the best adapted for all uses of any I have yet tried.

W. C. ORCUTT.

Groton, Tompkins Co, N. Y.

We are in receipt of Johnson & Lund's Teeth, and in our judgment they have combined in their manufacture all that is necessary to represent natural teeth.

GEO. W. TRIPP,
L. MATSON.

Auburn, N. Y., October 30, 1861.

I have for some length of time used Artificial Teeth of Messrs. Johnson & Lund's manufacture, and do not hesitate in saying that I find them superior in every respect to any others in use.

B. F. GOODWIN.

Ithaca, N. Y., November, 1861.

The improved Teeth of Johnson & Lund, are, in my judgment, of beautiful form and life-like in appearance.

D. S. GOLDEY.

Oswego, N. Y., Nov. 22, 1861.

If there is such a thing as perfection in the manufacture of artificial teeth, Johnson & Lund have certainly attained it.

E. J. LARASON.

Philadelphia, December 4, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund and consider them superior to any in use as to strength, appearance and durability.

J. D. GRISWOLD.

Avoca, N. Y., Dec. 13, 1861.

Having used your Teeth in my practice for some time I find that they possess all the qualities you claim for them. They are certainly very superior.

J. W. KNOX.

Philadelphia, Dec. 6, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund of Philadelphia, and can cheerfully recommend them as decidedly superior.

L. EATON.

Elmira, N. Y., Dec. 10, 1861.

Having used Johnson & Lund's Teeth, I can cheerfully recommend them for their superiority in strength, appearance and durability to any in use.

A. S. RHOADS.

Williamsport, Pa., Sept. 26, 1861.

Having been in the profession of Dentistry for the last twenty-five years and used all the different manufacturers' teeth, I would recommend Johnson & Lund's as equal to all others as to strength, appearance and adaptability to the case.

JOSEPH ELMENDORF.

Penn Yan, N. Y., Sept. 26, 1861.

Messrs. JOHNSON & LUND:

Dear Sirs—Having used Teeth of different manufacturers, I find that yours, for adaptation and beauty, stand "Letter A, No. 1."

J. R. SELOVER.

Bath, N. Y., Dec. 14, 1861.

Messrs. JOHNSON & LUND:

Gents—Yours of the 5th inst. came to hand all right, for which please accept my thanks; and not only would I wish to express my unqualified approbation and thanks for the very frank and prompt manner in which you have done business with me so far, but for the superiority of your teeth over other manufacturers, in strength, appearance and ability to stand fire. One block of those last sent, are, to my notion, perfect in point of color and shape.

Yours truly,

L. A. ROGERS.

Grand Rapids, Michigan, Oct. 16, 1861.

The Teeth of Johnson & Lund's manufacture I have used I can find no fault with.

H. GERHART.

Lewisburg, Pa., Dec. 1861.

Having used the Teeth of Johnson & Lund of Philadelphia, I can truthfully say, that they are as good as any I have ever used, and can recommend them to the dental profession.

J. A. CHASE.

Geneseo, N. Y., Oct. 25, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them fully equal, if not superior, to any now in use.

JAMES R. SNOW.

Phelps, N. Y., Oct. 29, 1861.

MESSRS. JOHNSON & LUND:

Gents—I have used your Teeth and I think they are of the best that are manufactured, either in New York or Philadelphia.

H. C. HOWER.

Bloomsburg, Pa., Dec. 19, 1861.

This is to certify that I have used Johnson & Lund's block teeth, and I consider them equal to any I have ever used, if not superior, and I have used four or five different manufacturers'.

L. D. RANK.

Williamsport, Pa., Sept. 21, 1861.

MESSRS. JOHNSON & LUND:

Dear Sirs—Having used your Teeth, and being pleased with them, I can recommend them to the profession as being superior to most of the teeth manufactured.

W. H. KLOCK.

Little Falls, N. Y., Nov. 14, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them superior as to natural appearance, beauty and strength to any in use.

C. J. WADSWORTH.

Cooperstown, N. Y., October 6, 1861.

MESSRS. JOHNSON & LUND:

Gents—Having used your Teeth to my entire satisfaction, I would cheerfully recommend them to the careful consideration of the profession.

J. D. ANDREWS.

Milton, Pa., December 18, 1861.

DR. M. FRANK:

Dear Sir—In reply to your inquiry it gives me pleasure to say, that having used Teeth of many different manufacturers I find those made by Johnson & Lund in every respect equal, and in some respects superior, to any others.

L. K. GARFIELD.

Watkins, N. Y., December 11, 1861.

MESSRS. JOHNSON & LUND:

Dear Sirs—Having used your Artificial Teeth for the past year in my practice, with many other kinds, I consider them as good and containing as many good qualities as any others that have come under my notice.

W. F. EDINGTON, D. D. S.

Geneva, October 28, 1861.

I have examined samples of Messrs. Johnson & Lund's Artificial Teeth, and think them equal to any I have seen, in form, strength and beauty of finish.

B. T. WHITNEY.

Buffalo, N. Y., October 21, 1861.

Philadelphia, February 18, 1862.

Messrs. JOHNSON & LUND :

Gents—Having for the last two years, used your Teeth almost exclusively, I can say with pleasure they are the best and most satisfactory under all circumstances ; and therefore I recommend them to the public with great satisfaction.

Very respectfully,

F. A. WARE,

No. 646 North Tenth Street.

HAYES' VULCANIZERS.

LIST OF PRICES.

Vulcanizing Oven of malleable iron, for one case, including thermometer, gas furnace, alcohol lamp, flask, clamp, wrench and duster, - - - - -	\$10 00
Vulcanizing Oven, of copper, for one case, including the same, all complete, - - - - -	11 00
Vulcanizing Oven, of copper, for two cases, including two flasks, one blank, &c., complete, - - - - -	12 00
Vulcanizing Oven, of copper, for three cases, including three flasks, two blanks, &c., complete, - - - - -	13 00
Vulcanizing Ovens alone, without fixtures, respectively, 7, 8, 9, 10	00
Thermometer for Vulcanizing Oven, - - - - -	2 00
Thermometer tube and scale, for Vulcanizing Oven, - - - - -	1 00
Alcohol Lamp and Gas Furnace for Vulcanizing Oven, - - - - -	2 00
Flasks for Vulcanizing Oven, each, - - - - -	50
Spring clamp and stand for Vulcanizing Oven, - - - - -	75
Wrench for Vulcanizing Oven, - - - - -	25
Packing Duster and contents, - - - - -	25
Extra Packings, each, - - - - -	10
Thermometer for Vulcanizing Boiler or Steam Chamber, (Hayes' patent,) - - - - -	3 00
Thermometer with safety valve, (Hayes' patent,) - - - - -	4 00
Tube and Scale, for steam thermometer, - - - - -	1 00
Liquid Vulcanite, to protect the flasks, per bottle, - - - - -	50
Goodyear's Vulcanizable Rubber, per lb., (for Licensees,) - - - - -	3 00

We can furnish the profession with Forceps, Turnkeys, Stump Extractors, Lancets, Plugging Instruments, Scaling Instruments, Excavators, Burrs, Drills, Hand Mirrors, Mouth Mirrors, Syringes, Files, Tooth-Powder Boxes, Dental Chairs, Spittoons, Rolling-mills, Acid Pans, Blow-Pipes, Soldering Lamps, Corundum Wheels, Lathes and all articles used in the profession.

DR. MONROE FRANK,
GENERAL TRAVELLING AGENT
 FOR THE SALE OF
Johnson & Lund's Improved Artificial Teeth,

RESIDENCE—CORTLAND, N. Y.

MECHANICAL DENTISTRY.

—o—

We have secured the services of a first-class Mechanical Dentist, and are now able to put up in the best possible style every kind of Artificial work: including

SINGLE GUM or PLAIN TOOTH WORK,
CONTINUOUS GUM WORK and BLOCK WORK.

LIST OF PRICES :

—

FOR PLATE WORK—SINGLE TEETH.

Striking up plate,	\$1 00
Mounting, per tooth,	30
Extra charge for Teeth and Plate.	

—

FOR BLOCK WORK.

Carving and Fitting blocks to plate, per tooth,	\$0 50
When soldered and finished, ready for the mouth,	1 25

—


FOR CONTINUOUS GUM WORK.

Lining, soldering and backing set,	\$10 00
Repairing—One tooth,	3 00
“ Each additional Tooth,	1 00

JOHNSON & LUND,
No. 27 North Seventh Street, Philadelphia.

LIST OF PRICES.

TEETH.

 Read the Testimonials presented to us by members of the profession.

Blocks or sections for rubber base,	-	-	-	-	\$0 18
Single Gum Teeth " " "	-	-	-	-	18
" " Plate work,	-	-	-	-	18
Plain " " "	-	-	-	-	9
" " Rubber base,	-	-	-	-	9
Pivot " "	-	-	-	-	8

GOLD FOIL.

C. Abbey & Son's, per $\frac{1}{8}$ oz.	-	-	-	-	\$4 00
David Morgan's, " "	-	-	-	-	3 50
S. S. White's, " "	-	-	-	-	3 50

TIN FOIL, &c.

Johnson & Lund's, chemically pure,	-	-	-	-	\$0 50
Townsend's Amalgam,	-	-	-	-	1 50
Os. Artificial, $\frac{1}{4}$ oz.	-	-	-	-	1 00

GOLD AND SILVER PLATE.

Gold plate, 18 carats, per dwt.,	-	-	-	-	\$0 90
" wire, " "	-	-	-	-	90
" solder, " "	-	-	-	-	90
" " 14 " "	-	-	-	-	75
Silver plate, wire and solder, per dwt.,	-	-	-	-	08

PLATINA.

Plate cut to pattern, per dwt.,	-	-	-	-	\$0 38
" " square, " "	-	-	-	-	35
Platina wire, " "	-	-	-	-	40

Bismuth, Asbestos, Tin, Lead, Zinc, and other metals, at lowest market rates.

THE DENTAL QUARTERLY.

VOL. 1.

PHILADELPHIA, JUNE, 1862.

No. 2.

DENTIST VERSUS GENTLEMAN.

BY A. TEES.

Considering the ills which flesh is heir to, physically, it is a matter of no very great wonder, that we meet with corresponding effects and defects spiritually, Debilitated by bodily infirmities, care-worn by mental anxiety, or unfortunately possessed of an irritable disposition, the dentist very often finds himself disquieted, and at variance with everything, and everybody around him. If such a disposition is allowed to get the upper hand of and master us, we will find ourselves venting it not only upon those in our immediate employ and society, but also imparting a share of it to those upon whom we depend for our sustenance, and who, paramount to all others, deserve, and ought to demand, a reasonable share of our good-nature and politeness.

When one is physically ill, and is compelled by the edict of the Almighty to earn his bread by the sweat of his brow, in cases of aggravation, with which, we acknowledge, the dentist is plentifully *blessed*, it may be beyond human nature, with such a person, to subdue ebullitions of temper or indignation; although we maintain it to be his duty to exert all the moral energy possible to gain the ascendancy over such evil passions. But we cannot even accept indisposition as an excuse for churlishness and want of self-control; though we are willing to extend to all such our sympathy and charity.

Mental anxiety we consider, too, a very poor excuse for the dentist not acting the gentleman; and this has given birth to long and loud complaints against the crusty and disagreeable manner, on many occasions, of members of the profession. While we allow ourselves to be fettered in this way, can we ever hope to exalt our profession to that point of excellence which has been the desire and ambition of late years of all pure minded, unselfish and skillful dentists. It should be our bounden duty, in all cases, pay or no pay, aggravation or insult, to adhere rigorously to the rules of politeness.

One, who by masterly skill and the busy tongues of his lady patients, has acquired practice enough to occupy all his time, may, perhaps,

not be brought to a proper sense of the ravages of his disagreeable failings, pecuniarily, so soon as he who is not so much blessed. We therefore can, with our whole heart, pity the man, who, possessed of skill, genius, energy and perseverance, commences practice, sadly deficient (through the whims and mistakes of his *mamma*, in bringing under subjection his unruly temper and amending his wicked ways,) in this part of his education. And more especially, when we cannot extend to him, any sympathy and charity, beyond that which all humanity demands.

We cannot make a better finish of this article than by extracting the following from the *Code of Ethics* adopted by the Pennsylvania Association of Dental Surgeons in October, 1854.

“Dentists should be scrupulously loyal to their trust, reflecting that their ease, health, and no inconsiderable share of the happiness of those committed to their charge, depend on their skill, attention and fidelity. They should study also, in their deportment, so to unite tenderness with firmness, and condescension with authority, as to inspire the minds of their patients with gratitude, respect and confidence. Every case committed to the charge of a dentist should be treated with attention, steadiness and humanity.

“Reasonable indulgence should be granted to the mental peculiarities and caprices of his patient. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential intercourse to which Dentists are admitted, in their professional relations, should be used with discretion, and the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal or domestic life, no infirmity of disposition or flaw of character, observed during professional attendance, should ever be divulged by him; except when he is imperatively required to do so.”

DENTAL CARIES.

Various causes have been assigned to account for the destruction of the dental enamel, among the more prominent of which are, the organic changes of the dentine during gestation—internal decay of the dentine, caused by the separation of its lining membrane, induced by inflammation and decomposition of the enamel by chemical agents.

So far as the hypothesis of disintegration of the dentine during gestation is concerned, I have little faith in it; for, considering the difference of density and vascularity, between the dentine and other bones, and assuming that each contributes a portion of lime, the

quantity dependant upon the amount it passes and its means of transposition, leads me to the conclusion, that long before a sufficient quantity of the substance of the dentine could be removed, so as to undermine the enamel, the preponderance of lime furnished, with the addition of a little sulphur, would be enough to form a plaster of paris fœtus.

The supporters of the second proposition, claim that the lining membrane of the dentine is invested with the characteristics of the periosteum, by asserting that death and decay of the dentine follows the separation of the lining membrane; and that caries once established within, works its way gradually to the surface of the enamel, appearing, as a learned dental writer observed, like a mole on a lady's neck. If this be the case, why does not the dentine of a tooth which is filled to the very apex of its fang, and every vestige of the pulp removed, decay around the plug? Or, a tooth that has been sufficiently luxated to disrupt the blood-vessels and nerves, upon which the pulp depends for sustenance, thus leaving the blood stagnant in the pulp, thereby rendering the tooth of a dark blue color, and often remaining in that condition for years, until removed by the absorbents. Why is not the lining membranes in both instances destroyed?

In my next paper I will conclude my speculations on this subject.

S. H. C.

SWAGING AND FINISHING PLATES.

BY AMBLER TEES.

Each dentist having his own particular mode of manipulating, and perhaps habituated to that mode, it might appear like presumption, in the attempt of one to divert the other from his way. But having been conceded, and from the rapid and important improvements in dentistry of late years been proven, that an interchange of ideas is beneficial, we hope that we are not presuming in offering to the readers of the "QUARTERLY" our method of *swaging and finishing plates*. If it can be of any benefit to the "*young practitioner*," whose education has given the worthy editors of other dental journals, so much *concern*, so much *anxiety*, and so many *sleepless nights*, this effort, perhaps, may not be in vain; trusting that the "*old practitioner*," whose education is completed, may discover something new, and also be edified.

In taking an impression for an atmospheric plate, to insure accuracy, care should be taken that it adheres to the roof of the mouth. To keep it perfect, and to remove it with more ease, the forefinger of each hand may be placed on each side of the jaw; and on raising the muscles the impression will drop.

If the ridge of the jaw should present an acute angle, rendering the model difficult to mould, plaster should be run around it, (previously oiling to prevent it adhering) and then moulded. The plaster remaining in the sand, will give a perfect impression of the ridge, and an excellent cast will be the result. By allowing the plaster to harden over night, bubbling will much better be prevented than by warming, although there is seldom any trouble from this source.

Where an atmospheric plate is required, there should invariably be two sets of dies ; both male dies being made of pure block tin. One set should be kept for a finishing touch, since the little rugæ, on the first, becomes battered down, often rendering a suction impossible. Zinc is frequently used, but the shrinkage of it gives much trouble. The vacuum of partial sets on atmospheric principle should be always made on the roof of the mouth, allowing the plate to extend around at least four or five of the natural teeth. Sets, where the cavity is formed in the front part of the mouth, upon the rugæ, invariably prove failures ; and the dentist finds that he is compelled to rely upon what perhaps his patient dreads, "*those horrid clasps.*"

In partial sets where no cavity is necessary, zinc will answer a better purpose, as only one set of dies will be requisite. In fitting clasps in such cases, a mistake is often made in getting the gold or silver, for the purpose, of too great thickness. If the tooth around which it is to be fitted, is larger at the crown than at the neck, (which is often the case) a wide clasp should be made, of the same thickness as the plate, reaching from the neck to the crown. If the tooth is of the same thickness at the neck as at the crown, then a narrow clasp may be used about two numbers thicker than the plate.

In arranging the articulation for a whole set, in order to get the exact length of the teeth, the patient should be directed to fix the mouth in its natural position. The lip may then be lifted, and with a pointed instrument a line should be drawn on the wax, about one sixteenth of an inch below the point of the lower lip, from one corner of the mouth to the other. This will give the length of the upper front teeth. If both upper and lower sets are being fitted, the wax on the upper may be trimmed off to the line above mentioned ; more wax than is needed placed around the lower plate, put in and trimmed off until the mouth assumes its natural appearance. The centre must then be marked off, and the wax on both plates joined together by means of a pointed instrument. They may then be removed, and the teeth are ready to be articulated.

Choosing the size and color of the teeth, is of great importance, and unless the dentist exercises great care, and calls forth all his artistic attainments, he is apt to fail in making a perfect set of artificial dentures. Much in this respect may be learned by observing the different colors of the natural teeth, and the blending of them in different individuals; at the same time paying attention to the complexion of the person, the color of the eyes, &c., &c. This will enable the dentist to judge, in a great measure, of the color of the natural teeth of the one for whom he is inserting artificial ones.

When the teeth are ready for backing or lining, it is an excellent time to prepare for finishing the plate; and, I may here remark, that much trouble will be saved, the risk of warping the plate diminished, breaking or cracking the teeth avoided, besides having a better chance to give a perfect finish,—to polish the plate on the brush with oil and emery, or oil and pumice stone, removing all scratches and file marks, immediately after the plate is fitted in the mouth, (which should always be done) and before the bite is taken.

The backings of the teeth should be parallel, and as far as possible equi-distant from each other, and finished off neatly. The metal should be a number thicker than the plate, and thick enough to allow of counter sinking well, and to be rivetted firmly to the tooth. After rivetting, the surplus platina of the pin should be filed off on a level with the lining, and the lining itself filed with a smooth file. This will cause the solder to flow evenly. The plate should be scratched where the backings meet it, causing the solder to attach itself firmly and quickly. The solder also should be scraped, and pieces cut about as long as the width of each lining, and one sixteenth of an inch wide, to be put where the lining and plate meets. Pieces about one sixteenth of an inch square should be put over each pin, previously wetting with borax ground to the consistency of cream. If single gum teeth are used, a neat and beautiful finish may be made by joining each backing with a narrow strip, running from its base one half its length, or to the point where the gum meets the tooth.

In thus taking a little care at this stage of the work, cracking teeth in soldering may be prevented, since the manipulator will not be compelled to keep the teeth heated up too long, and after it is soldered will have but little finishing to do. After boiling in sulphuric acid, a molar file and a scraper will, in a few minutes, render it ready for the oil-wheel. And as the plate has already been polished, the backings only will need brushing sufficient to remove the file scratches. After washing with castile soap and water, the finishing touch may be given with prepared chalk and a fine brush.

TREATMENT OF DECIDUOUS TEETH.

DENTAL COSMOS—MAY.

We receive so many letters from inquirers after knowledge on the different branches in the dental art, that it has long since ceased to be possible for us to answer each one individually; and hence we have for many years, in our writings, confined ourselves to such practical subjects which we thought would be of the greatest and most immediate good for all learners in our art. But still, no matter how close we apply ourselves in that direction, we cannot supply the rapid demand, or in other words, stop off individual inquirers. But we regard this as far more encouraging than discouraging.

We saw an able article recently on this subject in the *New York Journal*. We hope that writers—especially journal writers—will take a hint from this not to write long, labored, mystical, and altogether theoretical and lumbering articles for the journals. While publishers of periodicals do not wish to shut them out, they publish them with reluctance, and for want of better and more useful matter. It is certainly true that the mass of the profession is seeking practical knowledge, and that is what the publishers of all the periodicals we know of established them for. If there are numbers of members of the profession who wish to get their fine-spun theories before the profession, let them publish them in pamphlet form, or as treatises or text-books, at their own expense, and let buy them who may. We do not oppose science or the publication of scientific articles, but science is as simple as practice; but there are few writers with whose writings we are acquainted can see it so.

We make the foregoing remarks, more especially from the fact that the following questions have been put to us from a respectable source, on the treatment of children's teeth. The writer says:—

“I wish you to answer the inquiries I make. What is the best method of treatment of temporary molar teeth in children between three and seven years of age, which have decayed, and have gum-fistulæ formed? In adults I practice the remedies usually recommended by our best practitioners, and am more or less successful in bringing the parts to a healthy condition; but from a variety of circumstances—the age, the condition of the system, and the short period of time before the permanent teeth came—could the same remedies be used? If there is highly inflamed periosteum of the molar teeth in children, what is your treatment? Can extraction be avoided in this state of a case? Nitrate of silver and iodine are among the chief remedies for gum-fistulæ, but how serviceable are they or practicable when used on children? I shall be pleased to hear from you on these special branches of our profession.”

With reference to these first inquiries we would say, that we treat deciduous teeth, from three to seven years old, in the same way that we do adult teeth. We made that a special charge in our valedictory address to the first graduating class of the old Dental College of Philadelphia, as the too early extraction of the deciduous teeth produced many injuries. When a molar pulp is exposed we destroy it as in an adult tooth; take it out; as far as we can, wait until the bleeding subsides, and plug the cavity; if it be a firm tooth, with

gold ; if not very firm, with Hill's stopping. We do not use the oxychloride of zinc in children, because we cannot well keep it dry long enough as in adults, nor can we remove it as readily as the Hill's stopping. If pain sets in from inflammation of the periosteum, we remove the plug, open the roots freely, and relief is generally sure to follow. If the case comes to us too late for that, we let suppuration take place, and then lance the part as in an adult, and let the case take its course. There need be no anxiety to heal up the fistulous opening in the gum, as that can do no harm, at least not as much as the extraction of the tooth, if it be a long time before the period for the eruption of the second teeth. Sometimes, where the teeth will not bear the plug without bringing on immediate inflammation, we let them decay away, as the roots only remaining keep space for the adult teeth, and also prevent contraction of the gum. Even the roots remaining help to invite blood to the parts, and assist the growth of that locality, which of course is necessary to proper development of all parts. There is a determination of blood to a part proportionately to the amount of tissue to be supplied, conversely, as a physiological principle ; extraction should be avoided, even of root, unless where a "variety" of circumstances demand it—such as an extreme irritability of parts, which gives rise to constant pain, whether in a high state of inflammation or not, or very often repeated attacks of acute abscess, or injury to adjacent teeth, loss of sleep to the patient, signs of caries, sloughing, etc.

We never plug the roots of deciduous teeth, merely the large portion of the pulp cavity of the crown of the tooth. We never expect to heal an abscess of a deciduous tooth as of an adult tooth ; that is all the difference between treatment. It is desirable to retain an adult tooth as long as possible, and it will last longer without an abscess than with one, if it can be retained without pain ; but a deciduous tooth will last as long with a fistulous opening as it is wanted, as a general rule. Whatever palliation can be employed is all right. If it be healed up, it may be re-established by acute pain and inflammation, which risk is not worth taking, as a comfortable condition of the tooth for a limited time is all that is desirable in deciduous teeth. It is not reasonable that a fistulous opening can be healed up of a deciduous tooth as readily and as permanently as an adult tooth, when its fang is completely formed or ceased growing, the changing character and the increased vascularity consequent upon absorption of the deciduous roots favors the persistence of the fistulous openings in them.

We never use iodine about the teeth, as we have not seen much good in the use of it. Nitrate of silver, to get rid of undue irritation of the margins of the gums and on the mouths of fistulous opening, is sometimes useful, but never to heal a part up. The healing is favored more by keeping the root of a tooth open, except cotton and creosote and a tent of cotton in the fistulous in the gum, than medicaments ; consequently they are of little account in children.

A fistulous opening is not of much account in children, unless it interferes with the general health, and this must be left to the judgment of the dentist. The fears of parents should have nothing to do with it.

There have been several able articles published recently on the treatment of deciduous teeth, which we hope will be read with interest and profit; and we have referred to the same subject long since, in articles which may not perhaps have met the eye of our correspondent. Every new inquirer after knowledge is an additional evidence of the onward march of our noble art, and lends new encouragement to publishers and contributors to push forward in the good work, and that love's labor is not lost. J. D. W.

MESMERISM.

BY J. H. M'QUILLEN, D.D.S.

DENTAL COSMOS—MAY.

In the latter part of November, 1861, Mr. E., a highly respected merchant, who was undergoing a series of dental operations at the time, desired to know whether we had any objections to extract a number of teeth for a lady friend of his while in a mesmeric or psychological condition. Having expressed not merely a willingness, but also the pleasure it would afford us to have an opportunity of observing the phenomena attendant upon an operation under such circumstances, an appointment was made to meet them for that purpose a few days later.

At the time named, Mr. E., in company with his wife and friend, made their appearance. The patient having taken a seat in the operating chair, Mr. E. placed himself in front, and, after looking at her fixedly for a few minutes, she passed into a deep sleep or trance, during which a large molar tooth and ten roots were extracted, some of which were quite difficult to remove. The patient made no resistance, but, on the contrary, was entirely passive, and gave no evidence of suffering. After being aroused from the trance, she stated, in response to inquiries, that she neither felt any pain nor had the slightest consciousness of the operation performed. The time occupied was about ten or fifteen minutes.

In directing attention to this, our object is to present an instance in private practice in which a patient, by a peculiar influence—call it by what name you may, mesmerism, psychology, or od-force—was deprived of ordinary sensibility, and submitted to one of the severest operations in surgery, not only without a feeling of pain, but also without consciousness. Compelled by this, and the statements of scientific and reliable persons, to recognize the fact that there is something more in this matter than the world is generally willing to accord to it, we are at the same time fully aware that its employment as means of inducing anæsthesia must of necessity be extremely rare.

As a general thing, this subject has been left in the hands of charlatans, who have made use of it on account of the pecuniary benefit to be derived from it. In a few instances, however, it has attracted the attention of philosophical minds in a spirit of candid inquiry, and, after making due allowance for the exaggerations of quacks, they have acknowledged, as the result of continued and careful observation, that they could not but recognize the subject as well worthy of the study of the philosophical physician, and that, when

available, mesmerism should be employed as any other remedial agency would be. Prominent among these we find Prof. Mayo, this eminent physiologist, and Prof. J. K. Mitchell, who, as a man of science, a successful teacher and practitioner of medicine, is well known throughout the scientific world. Each of these gentlemen have published highly interesting and instructive treatises on the subject.* The following extracts, which are presented to the dental profession for the first time, are taken from Prof. Mitchell's essay:—

"No. 46. Mrs. D., aged thirty, a lady of genteel education and association, being too timid to bear the hand of the dentist, desired to be magnetized for the extraction of a tooth. So long as she supposed that the operation would immediately follow the sleep, she, who had been easily composed before, could not be soporized. It was only when the proposed operation was supposed by her to have been abandoned, that she could be mesmerized; and then, unexpectedly to her, the tooth was removed. The operation gave her severe pain, for she cried out, put her hand to her face, and opened her eyes, but almost instantly all signs of suffering were gone; when she was subsequently roused by passes, she had no kind of recollection of either the pain or the operation.

"No. 9. Miss E. P., who had been several times magnetized, was put to sleep for a similar operation. In this instance I called in the aid of a skillful dentist, and the tooth was extracted, not, however, without the expression of a sense of pain, but without calling the patient out of her sleep. That took place spontaneously some time afterward, while I and the dentist were discussing the subject.

"These cases show that the sense of pain is not uniformly destroyed by the magnetic state, as is alleged in almost all the treatises on the subject. But that the passability of some mesmerized persons may be nearly if not entirely subverted, is demonstrated by the following case:—

"No. 118. E. B., at the Orphan Asylum, being mesmerized, was, *without her knowledge, consent, or expectation*, deprived of a jaw tooth considerably decayed, and for the extraction of which she had for nearly a month been endeavoring to summon nerve enough to go to a dentist. The gum was inflamed, and the operation was performed by unpracticed hands, with a dentist's common key. Several persons being present, each was desired to watch for any expression or sign of pain. None was detected. The face was calm and death-like; the hands lay on her lap without the movement of a finger, and not a fibre of her system gave notice of any suffering. Yet the tooth resisted strongly, and the patient was, according to the testimony of her physician, Dr. Hays, and her dentist, Mr. Townsend, a very sensitive one.

"A few days afterward, at her own request, the same person lost another tooth in the same way, and with exactly similar phenomena.

* Popular Superstitions and the Truths contained therein, with an account of Mesmerism. By Hubert Mayo, M. D., of London, Professor of Anatomy and Physiology in King's College.

Five Essays. By J. K. Mitchell, M. D., of Philadelphia, Professor of the Practice of Medicine in Jefferson Medical College.

"In both instances, during her sleep, and soon after the operation, the patient was questioned as to her sufferings, and she replied that she had felt no pain.

"Some months afterward, the same person applied to me, through one of the physicians of the Asylum, to remove, after mesmerizing her, several diseased *teeth*. I promised to do so, provided she would come to my residence. There, in the presence of several of my friends, many of them physicians, the dentist above spoken of removed three teeth, and the stumps of two others, under the following circumstances:—

"Immediately after the extraction of the first tooth, so entirely painless did it seem, that an eminent law judge, who was present, observed that the tooth was set in for the occasion, that the gum did not bleed, and that I was deceived. The dentist immediately replied, 'No, sir, that tooth was as firmly in its socket as any other similar tooth; and here you see,' separating her lips, 'is the blood you look for.' After the removal of another tooth, it was suggested that the girl was impassive, and that a tooth should be pulled when she was awake, to test her capacity of endurance. Although I had learned from her physician and dentist that she bore pain badly when awake, I thought the suggestion a good one; and accordingly awoke her for the purpose. But it was impossible, by reasoning or entreaty, to obtain her consent, as she alleged that her sufferings when awake were too great for her resolution to support. I then took the dentist aside, and begged him to endeavor to push out one of the stumps with his thumb, or a concealed instrument. He accordingly desired to feel the tooth, as if for observation, and, with much address, suddenly applied his force to it; but a loud cry, and a violent projection of her body backward, gave indication of a suffering beyond her endurance. After a short lapse of time, this subject was mesmerized, and lost the rest of the bad teeth; showing, except in the very last operation, no apparent sensibility. Just as the last tooth, the fifth, was removed, there was a slight expression of pain. But to a question, she replied that she did not suffer. The same patient lately applied to me again, and a medical friend, Dr. Spencer, of Moorestown, New Jersey, removed a tooth for her when she was mesmerized, without any apparent sense of suffering."

ANÆSTHETICS.

With an aching tooth, one morning bright,
 Pat. Donnegan left his home.
 The "murtherin' blackguard," all the night,
 Had made poor Donnegan moan.
 With sorrowful phiz and watery eye
 Pat tracked along in the rain,
 When these words his optics chanced to spy:
 "Teeth pulled without any pain."
 Down went his shovel, and in went Pat,
 Like a "broth of a bye," as he was.
 And down in the dentist's chair he squat,
 With wide distended jaws,
 In went the nippers, and out came the tooth;
 "Yer miserable cuss" said Pat,
 "Ye'll trouble me now no more, forsooth."
 And he made for his old white hat.
 "My pay, if you please," said the dentist man—
 "Och murther! what's that yer sayin'?"
 Ye bloody old pirate, don't it say on yer sign,
 Teeth pulled widout any pa'in?"

FUNNYMAN.

CIRCULAR.

The AMERICAN DENTAL CONVENTION will hold its Eighth Annual session, at Trenton Falls, N. Y., commencing on Tuesday, the fifth day of August next, at 10 o'clock. The Profession is respectfully and cordially invited to attend.

The Executive Committee reported, at the last Annual Convention, the following order of business, and subjects for the next Convention :

ORDER OF BUSINESS.

- 1st. Admission of members.
- 2d. Reading Minutes of the last Convention.
- 3d. Report of Officers and Committees.
- 4th. Election of officers.
- 5th. Retiring President's Address.
- 6th. Induction of Officers.

All Essays shall be read to open the discussion on the subject to which they relate.

No member shall speak more than ten minutes, nor more than twice on the same subject without permission.

I. MISCELLANEOUS SUBJECTS. 1. Anæsthetics; their use and relative value. 2. Alveolar abscess. 3. The causes influencing an abnormal development of the teeth.

II. OPERATIVE DENTISTRY.—1. Filling Teeth. Simple and complicated cavities. 2. The Dental pulp. Its varied treatment. 3. The extraction of teeth.

III. MECHANICAL DENTISTRY.—1. Artificial Dentures. Temporary and Permanent.

IV. UNFINISHED BUSINESS.

N. B.—The Executive Committee suggest that half an hour every morning be devoted to the presentation of models, improvements and inventions, and the disposal of business not embodied in the regular order.

Signed,

W. H. ATKINSON,
G. T. BARKER,
W. B. ROBERTS,
I. J. WETHERBEE,
SAMUEL MALLET.

Executive Committee.

This is a Convention where all regular practicing Dentists may unite in the free discussion of subjects relating to, and the full interchange of opinions, experience and practice of the Science of Dentistry. As associated action is the surest means for advancement, it is hoped that by personal attendance, the contribution of Essays, and discussion of the subjects which have been presented by the Executive Committee, you will add to the interest of the Convention, and the elevation and advancement of the profession of Dental Surgery.

Yours, very respectfully,

B. T. WHITNEY, *Corresponding Secretary.*

DR. MONROE FRANK,

GENERAL TRAVELLING AGENT

FOR THE SALE OF

JOHNSON & LUND'S IMPROVED ARTIFICIAL TEETH,

RESIDENCE—CORTLAND, N. Y.

ARTIFICIAL TEETH.

TESTIMONIALS

To the excellence of our manufactures, from Dentists of the purest character and greatest skill flow upon us tumultuously with a warm welcome. Mingled with a conscious pride that we have attempted to merit this grateful praise, is the determination that we will spare no labor, no effort, to win and maintain the very highest niche in manufactural excellence. The conviction is forced upon us by the concurrent testimony of best judges in the profession, that our artificial teeth are among the best now manufactured in the world.

JOHNSON & LUND.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's; having used nearly all others.

JOHN L. CLARK.

Waterloo, N. Y., October 29, 1861.

MESSRS. JOHNSON & LUND:

Gentlemen—Having used your Teeth in my practice for the past year, and finding them *superior* to all others in *beauty, natural appearance* and *durability*, I hereby cheerfully add my humble testimonial in their favor.

Yours respectfully,

B. F. CLARK.

Flint, Michigan, Nov. 18, 1861.

I have used Teeth of the different manufacturers of Philadelphia of ten years past, and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their resemblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blowpipe, show that the proportions of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN.

Philadelphia, December 20, 1861.

This is to certify, that we have used the Teeth of Johnson & Lund, of Philadelphia, and think them superior to all others in use.

CONKEY & FRENCH.

Elmira, N. Y., Sept. 9, 1861.

The Teeth of Messrs. Johnson & Lund's manufacture I am using in my practice, and can find no fault with them.

G. B. BROWN.

Danville, Pa., Dec. 19, 1861.

This is to certify, that I have used the various and most of the different manufacturers' teeth for the last eight years, and now give to Johnson & Lund's the choice; deeming them as combining the most desirable qualities looked for in artificial teeth; such as naturalness of color, shape, symmetry and beauty of arrangement, comeliness of expression in the mouth, and strength and firmness for use.

R. WALKER.

Owego, N.Y., Oct. 1, 1861.

We find Johnson & Lund's Teeth a superior article, and are better satisfied with them than those of any other make which we have used.

JOHNSON & SNOW.

Hornellsville, N.Y., Oct. 24, 1861.

This is to certify, that I have bought of Dr. M. Frank, Johnson & Lund's Teeth, and consider them, without exception, the most beautiful I ever saw.

S. B. HYATT.

Lock Haven, Pa., Dec. 16, 1861.

Having used Johnson & Lund's Teeth for the last year, I find them to be all they recommend them to be, for strength, durability and adaption to all the various uses met with in our practice.

N. B. LAUNY.

Corning, N.Y., Sept. 27, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and am happy to say that they are superior in every particular to any in use.

A. H. MATSON.

Homer, N.Y.

MESSRS. JOHNSON & LUND:

Gentlemen—I am in receipt of your second lot of teeth; they are life-like and beautiful. Your teeth *stand fire well*.

Yours truly,

W. A. CHITTENDEN.

Scranton, Pa., Dec. 21, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, of Philadelphia, and consider them equal in every respect to any I have ever used, and very cheerfully recommend them to the profession.

F. H. GUIWITS.

Avoca, N. Y., Dec. 13, 1861.

Having used Johnson & Lund's Teeth to my perfect satisfaction, I would earnestly recommend them to Dentists in search of a superior article, and one that will always please.

S. F. TREMAIN,
(Of the Firm TREMAIN BROS.)

Rome, N.Y., Nov. 12, 1861.

I have used artificial teeth of the different manufacturers of this country, and do honestly believe Johnson & Lund's to be superior to all others in the various necessary and indispensable qualities desired by the dental profession.

H. M. SHEERAR.

Wellsville, N. Y. Oct. 24, 1861.

Having used the Teeth made by Johnson & Lund, (M. Frank, Agent,) I take pleasure in recommending them as equal to any teeth I have used for the rubber work.

A. N. PRIEST.

Utica, N. Y., November 13, 1861.

MESSRS. JOHNSON & LUND:

Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers; they are very much admired, particularly by the ladies, for their beauty and natural appearance in the mouth.

Yours respectfully,

E. C. KESTER.

Danville, Pa., December 19, 1861.

DENTISTS!—If you want a strong and natural looking artificial tooth, use the teeth manufactured by Johnson & Lund, of No. 27 North Seventh Street, Philadelphia, Pa.

Yours professionally,

L. D. EVELAND.

Milton, Pa., December 18, 1861.

Philadelphia, November 25, 1861.

MESSRS. JOHNSON & LUND:

Gentlemen—You asked me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The *beautiful shape*—the *life-like* and *natural* shades, and their *strength* under the *blow-pipe* and *hammer*, render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth deserves the thanks and substantial support of the dental profession. Wishing you success, I remain,

Yours truly,

M. LUKENS LONG.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession as a *decidedly superior article*.

F. O. HYATT.

Cortlandville, N. Y.

MESSRS. JOHNSON & LUND:

Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*

Ithaca, N. Y., November 7, 1861.

A. H. FOWLER.

Ithaca, N. Y., Nov. 7, 1861.

We have used in our practice for sometime past, teeth manufactured by Messrs. Johnson & Lund, and can speak highly of them in every respect.

BARTLETT & HOYSTRADT.

Lockport, N. Y., Oct. 17, 1861.

I have used teeth manufactured by Johnson & Lund, of Philadelphia, and like them much. Their color and shapes are admirable.

W. BRISTOL.

Philadelphia, December 7, 1861.

Permit us to say that your Artificial Teeth are excellent; they must eventually find their way into every dentist's laboratory throughout the country.

C. BENESOLE & SON.

Medina, N. Y., October 17, 1861.

Having used *Artificial* Teeth of the various manufactures, and having had occasion to use those manufactured by Johnson & Lund, we can speak of them in the *highest terms* as to *strength, beauty* and *adaptability* to the various styles required in artificial dentures. Their appearance in the mouth is natural and life-like.

A. V. BELDING & SON.

I use Johnson & Lund's make of Artificial Teeth and can recommend them as being perfect in every particular; they give *complete satisfaction* and leave nothing further to be desired.

J. M. BARRETT.

Wilkesbarre, Pa.

Messrs. JOHNSON & LUND:

Gentlemen—I have used your Teeth for some time and consider them fully equal, if not superior, to any others manufactured.

Yours respectfully,

E. SHELP.

Wilkesbarre, Pa., December 25, 1861.

Having inserted a number of Teeth manufactured by Johnson & Lund, it gives me great pleasure to recommend them to all dentists for their unsurpassed natural and life-like appearance, being satisfied that they stand the action of the fire and blow-pipe as well, if not better, than any manufactured.

AMBLER TEES.

1700 Vine Street, Philadelphia.

I have used Johnson & Lund's Artificial Teeth and believe that they combine all the qualities required by the dentist in a higher degree than those of any other manufacturer.

P. B. MERWIN.

Delhi, N. Y., Oct. 7, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and think them exceedingly beautiful and life-like.

HARRISON STICKER.

Milton, Pa.

Having used a variety of Teeth prepared by different manufacturers I cheerfully give my preference to Johnson & Lund's; believing them to combine more excellencies with fewer defects than those of any other manufacturer.

W. H. WOOD.

Cuba, N. Y.

I have been shown samples of Gum Teeth manufactured by Johnson & Lund, of Philadelphia, and think them exceedingly beautiful and life-like.

GEO. E. HAYS.

Buffalo, N. Y., Oct. 21, 1861.

Messrs. JOHNSON & LUND:

Sirs—I have used your Teeth of all kinds, and find them the best adapted for all uses of any I have yet tried.

W. C. ORCUTT.

Groton, Tompkins Co., N. Y.

We are in receipt of Johnson & Lund's Teeth, and in our judgment they have combined in their manufacture all that is necessary to represent natural teeth.

GEO. W. TRIPP,
L. MATSON.

Auburn, N. Y., Oct. 30, 1861.

I have for some length of time used Artificial Teeth of Messrs. Johnson & Lund's manufacture, and do not hesitate in saying that I find them superior in every respect to any others in use.

B. F. GOODWIN.

Ithaca, N. Y., Nov. 1861.

The improved Teeth of Johnson & Lund, are, in my judgment, of beautiful form and like-like in appearance.

D. S. GOLDEY.

Oswego, N. Y., Nov. 22, 1861.

If there is such a thing as perfection in the manufacture of artificial teeth, Johnson & Lund have certainly attained it.

E. J. LARASON.

Philada., Dec. 4, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and consider them superior to any in use as to strength, appearance and durability.

J. D. GRISWOLD.

Avoca, N. Y., Dec. 13, 1861.

Having used your Teeth in my practice for some time, I find that they possess all the qualities you claim for them. They are certainly very superior.

J. W. KNOX.

Philadelphia, Dec. 6, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and can cheerfully recommend them as decidedly superior.

L. EATON.

Elmira, N. Y., Dec. 10, 1861.

I have used Johnson & Lund's artificial teeth for a sufficient time to test their utility, and consider them equal, if not superior, to any others now in use.

WM. M. LOAG.

Port Deposit, March 25, 1862.

Having used Johnson & Lund's Teeth, I can cheerfully recommend them for their superiority in strength, appearance and durability, to any in use.

A. S. RHOADS.

Williamsport, Pa., Sept. 25, 1861.

Having been in the profession of Dentistry for the last twenty-five years and used all the the different manufacturers' teeth, I would recommend Johnson & Lund's as equal to all others as to strength, appearance and adaptability to the case.

JOSEPH ELMENDORF.

Penn Yan, N. Y., Sept. 26, 1861.

MESSRS. JOHNSON & LUND:

Dear Sirs—Having used Teeth of different manufacturers, I find that yours, for adaptation and beauty, stand "Letter A. No. 1."

J. R. SELOVER.

Bath, N. Y., Dec. 14, 1861.

MESSRS. JOHNSON & LUND:

Gents—Yours of the 5th inst. came to hand all right, for which please accept my thanks; and not only would I wish to express my unqualified approbation and thanks for the very frank and prompt manner in which you have done business with me so far, but for the superiority of your teeth over other manufacturers, in strength, appearance and ability to stand fire. One block of those last sent, are to my notion, perfect in point of color and shape.

Yours truly,

L. A. ROGERS.

Grand Rapids, Michigan, Oct. 16, 1861.

The Teeth of Johnson & Lund's manufacture I have used I can find no fault with.

H. GERHART.

Lewisburg, Pa., Dec., 1861.

Having used the Teeth of Johnson & Lund, of Philadelphia, I can truthfully say, that they are as good as any I have ever used, and can recommend them to the dental profession.

J. A. CHASE.

Geneseo, N. Y., Oct. 25, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them fully equal, if not superior, to any now in use.

JAMES R. SNOW.

Phelps, N. Y., Oct. 29, 1861.

Dr. M. FRANK:

Dear Sir—In reply to your inquiry, it gives me pleasure to say, that having used Teeth of many different manufacturers, I find those made by Johnson & Lund, in every respect equal, and in some respects superior, to any others.

L. K. GARFIELD.

Watkins, N. Y., Dec. 11, 1861.

Messrs. JOHNSON & LUND :

Dear Sirs—Having used your Teeth, and being pleased with them, I can recommend them to the profession as being superior to most of the teeth manufactured.

W. H. KLOCK.

Little Falls, N. Y., Nov. 14, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them superior as to natural appearance, beauty and strength to any in use.

C. J. WADSWORTH.

Cooperstown, N. Y., October 6, 1861.

Messrs. JOHNSON & LUND :

Gents—Having used your Teeth to my entire satisfaction, I would cheerfully recommend them to the careful consideration of the profession.

I. L. ANDREWS.

Milton, Pa., Dec. 18, 1861.

Messrs. JOHNSON & LUND :

Dear Sirs—Having used your Artificial Teeth for the past year in my practice, with many other kinds, I consider them as good and containing as many good qualities as any others that have come under my notice.

W. F. EDINGTON, D. D. S.

Geneva, Oct. 28, 1861.

I have examined samples of Messrs. Johnson & Lund's Artificial Teeth, and think them equal to any I have seen, in form, strength and beauty of finish.

B. T. WHITNEY.

Buffalo, N. Y., Oct. 21, 1861.

Philadelphia, February 18, 1862.

Messrs. JOHNSON & LUND :

Gents—Having for the last two years, used your Teeth almost exclusively, I can say with pleasure they are the best and most satisfactory under all circumstances; and therefore I recommend them to the public with great satisfaction. Very respectfully,

F. A. WARE,

No. 646 North Tenth Street.

Messrs. JOHNSON & LUND :

Gents—Having used your Rubber teeth for some time, I am fully convinced that they possess all the qualities desired by the Dental profession.

WM. S. BITTNER.

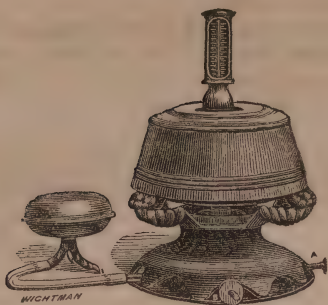
Altona, May 9th, 1862.

Messrs. JOHNSON & LUND :

Dear Sirs:—I have for some time used teeth of your manufacture—also, those of other manufacture; yours, in particular, with entire satisfaction. I think I can with all propriety say that they are a combination of strength, beauty and durability; also, that they combine smoothness, uniformity and life-like appearance in their construction.

S. W. DICKERSON.

Trumansburg, N. Y., March 15th, 1862.



HAYES' VULCANIZERS.

LIST OF PRICES.

Vulcanizing Oven of malleable iron, for one case, including thermometer, gas furnace, alcohol lamp, flask, clamp, wrench and duster,	\$10 00
Vulcanizing Oven, of copper, for one case, including the same, all complete,	11 00
Vulcanizing Oven, of copper, for two cases, including two flasks, one blank, &c., complete,	12 00
Vulcanizing Oven, of copper, for three cases, including three flasks, two blanks, &c., complete,	13 00
Vulcanizing Ovens alone, without fixtures, respectively, 7, 8, 9,	10 00
Thermometer for Vulcanizing Oven,	2 00
Thermometer tube and scale, for Vulcanizing oven,	1 00
Alcohol Lamp and Gas Furnace for Vulcanizing oven,	2 00
Flasks for Vulcanizing Oven, each,	50
Spring clamp and stand for Vulcanizing Oven,	75
Wrench for Vulcanizing Oven,	25
Packing Duster and contents,	25
Extra Packings, each,	10
Thermometer for Vulcanizing Boiler or Steam Chamber, (Hayes' patent,)	3 00
Thermometer with safety valve, (Hayes' patent)	4 00
Tube and Scale, for steam thermometer,	1 00
Liquid Vulcanite, to protect the flasks, per bottle,	50
Goodyear's Vulcanizable Rubber, per lb., (for Licensees,)	3 00

WHITNEY'S VULCANIZERS.

LIST OF PRICES.

No. 1—1 Flask, Lamp, &c., complete for use,	\$12 00
" 2—2 " " " " " " " "	13 00
" 3—3 " " " " " " " "	14 00
Extra for both Lamp and Gas Burner,	50
" Thermometer, (for these machines,) Tube and Scale,	75
" " " " " " " " Sent by mail, (Postage 6c.)	81
" Flasks of malleable iron,	50
When packed for shipment, box	25

We can furnish the profession with Forceps, Turnkeys, Stump Extractors, Lancets, Plugging Instruments, Scaling Instruments, Excavators, Burrs, Drills, Hand Mirrors, Mouth Mirrors, Syringes, Files, Tooth-Powder Boxes, Dental Chairs, Spittoons, Rolling-mills, Acid Pans, Blow-Pipes, Soldering Lamps, Corundum Wheels, Lathes, and all articles used in the profession.

MECHANICAL DENTISTRY.

We have secured the services of a first-class Mechanical Dentist, and are now able to put up in the best possible style every kind of Artificial work: including

SINGLE GUM or PLAIN TOOTH WORK,

CONTINUOUS GUM WORK and BLOCK WORK.

LIST OF PRICES.

FOR PLATE WORK—SINGLE TEETH.

Striking up plate, - - - - -	\$1 00
Mounting, per tooth, - - - - -	30
Extra charge for Teeth and Plate.	

FOR BLOCK WORK.

Carving and Fitting blocks to plate, per tooth, - - -	\$0 50
When soldered and finished, ready for the mouth, - - -	1 25

FOR CONTINUOUS GUM WORK.


Lining, soldering and baking set, - - - - -	\$10 00
Repairing—One tooth, - - - - -	3 00
“ Each additional Tooth, - - - - -	1 00

JOHNSON & LUND,

No. 27 North Seventh Street, Philadelphia.

LIST OF PRICES.

TEETH.

 Read the Testimonials presented to us by members of the Profession.

Blocks or sections for rubber base, \$0 18	Single Gum Teeth, Plate Work, \$0 18
Single Gum Teeth, “ “ 0 18	Plain “ “ “ “ 0 9
Plain “ “ Rubber base, - 0 09	Pivot “ “ “ “ 0 08

GOLD FOIL.

C. Abbey & Son's, per $\frac{1}{8}$ oz. - \$4 00	David Morgan's, $\frac{1}{8}$ oz. - \$3 50
S. S. White's, $\frac{1}{8}$ oz. \$3 50	

TIN FOIL, &c.

Johnson & Lund's, chemically pure, \$0 50	Townsend's Amalgam, - \$1 50
Os. Artificial, $\frac{1}{8}$ oz. \$1 00	

GOLD AND SILVER PLATE.

Gold plate, 18 carats, per dwt., - \$0 90	Gold wire, 18 carats, per dwt., \$0 90
“ solder “ “ - 0 90	“ solder 14 “ “ \$0 75
Silver plate, wire and soldered, per dwt., \$0 08	

PLATINA.

Plate cut to pattern, per dwt., - \$0 38	Plate cut square, per dwt., - \$0 35
Platina wire, per dwt., \$0 40	

Bismuth, Asbestos, Tin, Lead, Zinc, and other metals, at lowest market rates.

THE DENTAL QUARTERLY.

VOL. 1. PHILADELPHIA, SEPTEMBER, 1862. No. 3.

GIVING AND RECEIVING.

It is not our design in these remarks to disparage in the least the obtaining of *Letters patent* for improvements or inventions in the various branches of Dental Science. There should be, certainly, some stimulus for a dentist's efforts, and we do not see why "the greater the reward, the greater the exertion and emulation" should apply less to his human nature, or be less a matter of fact with him, than with others. We know there are some whose views in this respect are antagonistic to our own, who regard such a course as selfish—and who contend that if pursued by a dentist, will act as a drawback to the advancement of dentistry. When we can look upon a man who bolts his doors and fastens his windows at night, as committing a selfish and imprudent act, detrimental to the welfare of society, then will we be prepared to view in the same light, a dentist who takes advantage of the reward extended to him by his country for his industry and toil. "*He is not a covetous man who lays up something providentially, but he is a covetous man who gives out nothing willingly.*"

If more liberality were shown on the part of those who participate in the benefits of the improvements, happier results to the profession would be the consequence, and he whose time and labor have been devoted to the prosecution of the invention or improvement, would have more to share with him in the expenses incurred, and to reward him for his genius and diligence. If any evil results (and we know of none,) have been the consequence of dental patents already issued, the fault we

think lies at the door of the profession, and not at that of the inventor. The advancement and prosperity of this nation, is owing in a goodly measure to the facilities and inducements offered in this respect to its citizens; causing, both in a direct and an indirect way, immigration from all parts of the globe. The beneficial results on other arts, trades and sciences, must be apparent to every candid thinker, and why it should not have an equally beneficial result on our profession is a mystery to us. It is strange that there should be such an outcry by some against dental patents! It is high time that such "old foggy" notions were sentiments of the past.

Although we are thus willing to give "the laborer his hire," and "justice to whom justice is due," yet we think there are hundreds of practitioners whose duty is to give from their storehouse of knowledge. Those especially who are continually receiving valuable hints and information through the columns of dental journals, whom want of energy or other reasons, good, bad and indifferent, do not allow to contribute in turn to the welfare of their benefactors; perhaps considering the paltry sum paid for subscription recompense enough. Enjoying as they do, free access to the columns of dental journals, for all practical and sensible ideas and suggestions, which privilege should be appreciated, one would suppose there would be more willingness on their part to extend sympathy and the right hand of fellowship to those, who, with them, are struggling up the rugged paths of the Hill of Science.

We hope that publishers will not have long to ask in vain for articles from their readers, nor their periodicals be alone supplied with the productions of but a few; but that each dentist may consider it his duty to add something to the common storehouse. Even if it be not an elaborate essay, embellished with words copied from medical dictionaries, and which as soon as written are forgotten, but a plain Anglo-Saxon, common sense description of a difficulty overcome, and the *modus operandi* of overcoming it. All may rest assured that such will be thankfully received by publishers, and with pleasure perused by readers. There should be a great revival in this respect, and

we trust that ere long tidings will be received from those remote corners and haunts, where heretofore modesty and indifference have held too firm sway; and we hope that those who have been enjoying the blessings of receiving, may find that it is far more blessed to give. A. T.

DENTAL CARIES.

(CONCLUDED.)

I am of the opinion that the process of the decomposition of the enamel commences externally, and that its destruction is effected by chemical agents only. It is true that after the death of the pulp from luxation or inflammation, and not by decay of the dentine, corrosive gases will be formed, but they are soon eliminated by a fistulous opening through the process and gum; or when relief is not obtained in this way, extraction of the tooth is necessary, unless it be drilled through the crown to the pulp cavity, the foetid mass removed, and the root properly prepared and filled, which treatment generally secures the tooth to the patient for an indefinite time. Fomentations may be applied and opiates administered with but temporary effect, except in rare instances.

Absorption of the dentine internally after the death of a tooth is impossible, as the absorbents (if there be any) die simultaneously with the other vessels.

External absorption is carried on to a greater or lesser extent, as the dead root is embraced by a living membrane. The crowns of discolored teeth are occasionally crushed in, but not more frequently in proportion than those apparently healthy, for if they are critically examined they will be found to contain numerous foramine in the enamel, which have been formed by the destruction of imperfect tubuli by acidulous fluid, which then attacks the dentine and quickly destroys the foundation of this cubriform structure, which is then liable to be forced in by any hard substance that impinges it.

I have a patient who has had a "blue tooth" for twenty-five years, and the enamel is seemingly as perfect as it was at the

period of eruption, with the exception that it is somewhat worn by the impression of its antagonist, and the gum embraces it as promptly as in first eruption.

The destruction of the human teeth seems irrational ; but still to my mind, it is consistent with mental enervation and physical deterioration.

It no doubt seems so to many ; but when we reflect that the Egyptians were more indulgent with their appetites than we, among the philosophical it may cause a pause. Consider Cleopatra as she quaffs the liquid pearls, at her banquets, feasts of the gods, the most luxurious that mortal e'er looked upon or mingled in ! But ah ! may she not in those acidulous cups destroy a pearl richer and dearer to her, and more jealous of her beauty, than all the wealth of her gorgeous court ?

Even Zenobia, that woman with a gracious smile, and stern resolve (great monitor of the passions), authorities say, demanded the Elephant and Hippopotamus as tributes to her beauty.*

In short, without reiteration, the reduction of man to almost barbarism, is necessary to his physical regeneration.

Among our own people, and in the great cities of Europe, we only find decay of the dental enamel to any considerable extent. But among those of simpler habits, particularly the peasantry who subsist almost entirely upon cereals ground with the hulls, we find vigorous constitutions and excellent teeth. This is attributable to the greater quantities of lime that are found near the surface of the grain. Whilst health and vigor attend the frugal meal, impoverishment and disease await the bodies of those who indulge their appetites in the refinements of the table.

I have come to this conclusion, that man's province is very much limited, that he goes down from decadence to decadence, until the very weakness of luxury amounts to the festering substances which rejuvenate the plant of man into wild exuberance, and cause him to *extravasate* into wild branches, tendrils, and fibres, and then grow up again, gradually from condition to condition until he becomes himself again. It really seems to me

* Gibbons' Decline and Fall.

that it is necessary that man should almost go back to his primitive state as shadowed forth in the apocalypse. The reason why I think this, is because that I have learned that grand rule, to deduct from the past what the present is, and what the future will be.

If we go to Ireland, or Scotland, or Germany, among those of simple frugal habits, it is rare that we find the necessity for the dentist. But in London, Paris, Lyons, Rome, Vienna, among those given to luxury, we find dental decay and general physical destruction. When we return to our own country, where luxuries are abundant, we find a still stronger contrast; and the principal, in fact the only reason, why the decay of the teeth is not more general in Europe than in this country, is that they do not indulge to one-hundredth the extent in the luxuries that we do. Dickens, in his Notes on America, says a mechanic at his table, feasted upon more luxuries than many gentlemen in England; now, therefore, I deduce from these facts, that this high seasoned food, (procurable by the poorest laborer in America, and something not to be thought of by England's or Ireland's hard working son's,) by generating acids and gases, has a great influence in causing the external decay of the dentine.

Luxury, to all appearance, has divested mankind of the greater part of those substances which were necessary to his perpetuity. It is evident to every one, from what I have said on this subject, that those in the simple conditions of life neither desire advancement or degradation, and simply look forward to what is naturally the common impulses of nature, unless interfered with by those who have been already steeped in luxury and delved in false philosophy. In summing up I would simply refer to the eloquent words of Solyman Brown.

"Oh luxury! the eldest born of wealth,
 "Thou foe to virtue, and thou bane of health,
 "Insidious nursling on the lap of ease,
 "Whose breath is pestilence, whose smile disease."

* * * * *

"Of all the ills that antedate the doom
 "Of erring mortals, and erect the tomb
 "So near the cradle, shortening to a span
 "The fleeting life of transitory man,
 "The worst is luxury!"

S. H. C.

SWACING AND FINISHING PLATES.

(CONTINUED.)

A dentist, who almost wholly inserts artificial teeth on gold plate or continuous gum work on platina, (if he be a good manipulator,) finds but little difficulty in ordinary mouths, on account of the comparative non-warping character of well alloyed 18 carat gold and platina, in furnishing his patient with a perfect vacuum and a good fit. The majority of practitioners who insert sets mounted on silver plate, except they use the pure silver, cannot be said to meet with the same success. Alloyed silver sold at the depots, the bulk of which is made of coin, contains too great a proportion of copper, the expansibility of which is well known. To the use of this the cause of so many failures can be traced, and that even in partial sets. The imperfect adjustment may not be so much noticed in sets where clasps are relied on, as when a cavity is used. Although a suction may be obtained, so that on a direct pull the plate can scarcely be removed, yet, by pressing on the ridge we discover that the vacuum is destroyed, and that the plate *rides*. This difficulty may be obviated in two ways. First, by using pure block tin for the male dies; and, secondly, by making the plate of pure silver.

The tin is easily spoiled by carelessness in melting. Too often it is allowed to remain in the fire until it becomes bright red and is rapidly oxidized. It melts readily so that it does not require a super-abundance of patience to watch it while melting. When removed from the fire before pouring, it should be stirred until it assumes a slight mushy state, and for this nothing perhaps answers a better purpose than a pine stick. If it is then poured quickly and allowed slowly to cool, not being disturbed for at least fifteen minutes, a good cast may be had. It should then be coated with a thin solution of prepared chalk, and when dry the lead for the female die poured in. Before pouring, it should be treated in the same way as the tin, thus preventing the two adhering. Two sets of dies should be made in this way, one to be used as a finishing touch.

Pure silver may be used with success both in upper and lower sets. The objection may be urged that the plate will not be

stiff enough. Before we tried it, this objection was also presented to us. But we found by using a plate of proper thickness and connecting the backings of the teeth together, (as described in the last number of the "QUARTERLY,") so as to form a perfect arch, we obtained strength enough for every practical purpose. For the backings the alloyed silver can be used. Equal quantities of pure silver and American coin melted together we use for partial clasp sets, where more than two or three teeth are required, and also for small partial plates on atmospheric principle.

Pure silver plates may be strengthened by having a band to over-lap the gum portion, where it and the anterior portion of the alveolar ridge touch. This band is soldered on by many; but as beautiful a finish may be made, with economy of time and patience, by allowing for it on the plate. On the plaster cast, mark with a lead pencil the distance on the ridge that the plate is to extend. At right angle to it build on either plaster or wax. Varnish with a thin tincture of gum shellac and mould when dry. The band will form a portion of the plate, and to be allowed for when it is cut. After the teeth are soldered on this can be burnished down. As it is of pure silver it will yield very readily, and will make a strong and pretty finish.

The great trouble to be overcome in alloyed silver plates is the warping in soldering. A great many remedies have been tried, but since the fault lies with the alloy, none have been successful. If it would yield, and readily burnish to the cast after being soldered, the objection to it would not be so strong. But as it is, it is almost next to impossibility without removing the teeth to make it again fit the cast. With pure silver this is not the case. In soldering there is no change, and if any, cannot be noticed. It will fit the plaster cast as well after soldering as before, and if by any accident it should be changed, a burnisher and an experienced hand will soon remedy the defect. This is not offered as theory, but is the result of practice. We have tried sets mounted in this way for two years, and being successful, have adopted the plan in all silver work, both temporary and permanent, and our advice to others is to go and do likewise.

A..T.

INVESTMENTS OF ARTIFICIAL TEETH.

There is no part of the work requisite in the mounting of artificial teeth, in which greater care, and the exercise of more patience is necessary, than in *soldering*. The over-heating excitement during the act, the vexation consequent upon the failure to cause the solder to flow, and, above all, the mortification, on the cracking of the investment, causes it at some times, to be the most difficult manipulation in mechanical dentistry. So far has this been the case, that it was the habit, acknowledged by himself, of one of the best dentists in New York city, now deceased, to lay down the case before finishing soldering, go up stairs, change his shirt, go out and take a walk, and after recruiting his spent energies, return to his laboratory and try it again.

The use of investment for the teeth does not date back beyond a half century. The "old foggy" dentists of those days, doubtless considered their profession very far advanced in point of excellence; but we young Americans of the present day regard it as being only then in its infancy; and good reasons have we for thinking so. Before the use of plaster for investment, each tooth was wired and soldered on separately. The use of plaster, although superior to the old plan, did not answer the purpose exactly. After trying various substances to mix with it, in order to counteract the cracking of the plaster in heating up, sand was at last fixed upon, and is used by the majority of dentists at the present time. The name of the inventor of this mixture, which created such an important revolution in this part of the manipulating process, has not been handed down. We have heard two old dentists, on separate occasions, each claim the honor of the discovery; not only in the use of plaster, but also of plaster and sand. Had the claim of one been for the discovery of the plaster, and that of the other, of the mixture of plaster and sand, their claims would have been listened to with some attention, and been more susceptible of investigation and acknowledgement.

Superior, though, to sand is an ingredient sometimes used, but more particularly in platina work, an article of commerce

called "*Asbestos*." We do not think that anything, to answer a better purpose, except in point of compactness, can be found, since it will stand the highest possible heat without cracking. But since sand can be obtained readily in any place, whilst asbestos is more difficult and expensive to procure, the former has almost wholly superceded the latter. The discoverer of the use of *Asbestos* (for this purpose,) we believe, was Dr. John Allen, of New York, inventor of the "Continuous Gum Work," in which style of work sand cannot be used, the heat being so great as to crack such an investment into a thousand pieces.

In many cases in order to prevent an investment of plaster and sand cracking, it has to be wired. To avoid this we have been using in our own laboratory for a year past, a mixture of plaster and gray soapstone; the idea of which was suggested to us by a lot of lump soapstone in the cellar. It was a few months before we acted upon the idea, but when we tried it, which we did on a case of Continuous Gum Work, it agreeably satisfied us, (making a very compact investment,) and we have been using it since, to the exclusion of both sand and asbestos, in gold, silver and platina. The article can be obtained in any city, town or village. The powdered article costs about eight cents per quart, and can be obtained of Johnson & Lund. A. T.

THE AMERICAN DENTAL CONVENTION.

We had the pleasure to attend the Dental Convention at Trenton Falls, N. Y., held in the Union Church of that place, where a number of our well-known dentists assembled on Tuesday morning, August 5th, 1862. The order of business occupied four days, there being morning and afternoon sessions.

Besides the regular order of business as published in the last number of the "*Quarterly*," various subjects of interest were brought up. That of adding dentists to the medical department of the army, elicited remarks from Drs. Burras, Westcott and others.

The following letter received by Dr. J. D. White, was offered to the Convention.

SURGEON GENERAL'S OFFICE,
Washington City, D. C., July 28, 1862.

MY DEAR DOCTOR:—

Nothing would give me greater satisfaction than to have a corps of accomplished dentists added to the medical department of the army. I shall recommend it in my report to Congress. Nothing can be done, however, but by law, and I would suggest to you the propriety of agitating the subject through the public prints.

Yours truly,

WM. A. HAMMOND.

We make the following extracts from the interesting address of the late President, DR. JOHN ALLEN, of New York.

"At our last annual meeting it was my privilege to make some remarks upon the causes which retard dental progress; I will now present a few thoughts upon the best means, as I conceive, of advancing dental science. This can be done by two distinct methods—the one, by the united efforts of the profession; the other, by that of individuals. Let dental practitioners act in concert in building up our dental colleges; let them encourage more liberally our *dental journals*, establish and sustain properly organized dental associations, and by these means dental science will be advanced. I need not detail the advantages that each of these possess in diffusing dental knowledge among the profession; they are self-evident to every thinking mind. I will, therefore, dwell more particularly upon individual efforts as a means of advancing dental science. For such is the nature of our profession, that every successful practitioner must rely upon himself, to devise ways and means to meet the various exigencies that present themselves in dental practice. Cases may frequently occur, for which he may seek in vain to find in books exact parallels. He must then fall back upon his own resources."

The President elect, Dr. Westcott, also made a few remarks to the point, hitting upon individual effort in elevating the profession and suppressing Quackery.

Dr. Dwinelle followed in the footsteps of the two preceding gentlemen, reducing his ideas into preamble and resolutions—which, we think, made some of the members of the convention feel a little *queer about the toes*—which for the benefit of our readers we give.

“Whereas, the dignity and good name of our profession have been assailed in times past by those who would prostitute the honor of our noble calling to base uses; and *whereas*, through an almost criminal weakness on our part, we have unwittingly been made the instruments of increasing this evil, until it has reached an alarming extent; and *whereas*, this evil has shown itself, especially of late, in the countenance and aid that has been given to the practising upon us the use of certain patent rights—sometimes by threats until tribute is paid, and sometimes upon influential members by presentation—patents upon articles either worthless in themselves, or by right of prior invention belonging to the profession, or patents in themselves otherwise *invalid*; and *whereas*, our reproach is being daily augmented by these practices, until we are obliged to rise in our might to protest against it, and prevent any further disgrace: now therefore be it

Resolved, by the American Dental Convention, representing the whole body of the profession throughout the country, that it is our duty, in view of these facts, that we should here, and at this time, in behalf of those we represent, strongly and firmly protest against all such action as we have mentioned, or shall hereafter discover as dangerous, fraudulent, and dishonorable; and that the system of patents when thus prostituted to nefarious purposes, is a reproach from which the profession must be purged.

Resolved, that we endorse all action that has been or may be taken by any individual or body in our profession, having for its basis such protection of the standing and interests of the same, and such reprobation of all that is injurious and unjust to them in this matter. After some “fluttering” and much discussion, the resolutions were carried.

Drs. Rogers, Colburn, Kingsley, and others, gave their experience of chloroform and ether as anæsthetics.

Dr. J. Allen used a local application of equal parts of arnica, chloroform and aconite.

Dr. Westcott Taft and others, treated the convention to their "*modus operandi*" of dealing with alveolar abscess.

Dr. Westcott opened freely through the teeth in such cases, removed all the causes and thoroughly filled the root afterwards.

Dr. Searle, in cases of exposed pulp, capped them with oxychloride of zinc and filled over with gold. A piece of cambric dipped in chloride of zinc, he places over the exposed point. The patient experienced but little pain.

The practice of filling over exposed nerves was advocated by some of the members, whilst others disapproved of it, advancing that the nerves in such cases invariably died.

Mechanical dentistry, an interesting subject, was introduced on the fourth day. Each of the different methods of mounting had its advocate. Franklin, agent of the rubber company, presenting the claims of his vulcanite and vulcanizer. Allen, through thick and thin, pleading the purity, beauty and durability of continuous gums on platina; advising its use both in temporary and permanent sets, and proving in Hyer and Heenan style, that to make a perfect set of dentures, it is necessary to be "some on the muscles." Palmer, with miser-like simplicity, clinging to his gold; and Taft, unprejudiced "soul," condemning no material, but using that which is the *best*; but, notwithstanding, playing the mischief with *rubber*, which he considered had been playing the mischief with *him*.

The following are the officers for the ensuing year.

President.—DR. A. WESTCOTT, of Syracuse, N. Y.

Vice-President.—DR. J. TAFT, of Cincinnati, Ohio.

Corresponding Secretary.—DR. W. B. ROBERTS, of New York City.

Recording Secretary.—DR. F. SEARLE, of Springfield, Massachusetts.

Treasurer.—DR. J. C. ROBINS, of Jersey City, N. J.

ORDER OF BUSINESS FOR 1863.

1. Causes influencing an Abnormal Development of the Teeth.

2. Treatment of dental irregularities and appliances for the same.

3. 1. Filling teeth. 2. Filling temporary teeth. 3. Best material for same.

4. Diseases of the antrum and treatment.

5. Treatment of cleft palate.

6. Alveolar Abscess.

7. Mechanical Dentistry.

8. Miscellaneous business.

W. H. DWINELLE,	} Committee.
W. A. PEASE,	
W. D. STONE,	
D. W. PERKINS,	
T. L. BUCKINGHAM,	

The convention will next year assemble at Saratoga Springs, N.Y., on the first Tuesday in August.

F. N. JOHNSON.

DESTROYING NERVES & FILLING CAVITIES.

BY W. H. SHADOAN.

In several numbers of the Register I have, in as plain and simple a manner as possible, attempted to give a description of the process of destroying the nerves of the teeth, and the success obtained. I know that a great many dentists, some of whom are said to be *good* practitioners, deny the fact of the permanency of a job, after the tooth has ached; while other practitioners, of equal attainments, assert in the most positive terms that it has been done, and they (the teeth thus treated) made as permanent as any of the other teeth.

In the thirteenth volume of the Register, page 117, I gave an idea of my process of the treatment of such cases, and in volume fifteen, under the head of "Alveolar Abscess—Treatment and Cure," you will find another case, which, if taken as proof in the present case, will go far towards proving that if a tooth aches, it is not sufficient reason that it must be sacrificed on the altar of some bungler's "Cant hook."

What is a dentist, or what are his duties? The dentist most assuredly ought to know more than simply to "pull a tooth," or plug one, or make a substitute. If I understand the term Doctor of Dental Surgery, it means a man skilled in the art of curing the disease of the mouth, coming in what shape it may.

If a tooth is diseased at the root, why not cure it as well as the physician cure his patient of periostitis? The fact of it being a tooth does not necessarily follow that it must be extracted if it gets sick, or if the nerve becomes diseased, that the tooth must be lost, no matter where it is situated, whether as a grinder or a cutter, or whether the decay is slight or extended, so as to leave nothing but a shell, I say I deny it. I have cured teeth of almost all manner of disease, and under favorable circumstances, it can always be done.

I have not taken up with this "hobby," as some would call it, merely to have something to boast of by any means. On the contrary, I have taken up with it from an honest belief that all can be done that is claimed. Who would think of amputating an arm because there is a boil, or a leg because there is a supposed white swelling? Employ undoubted skill, and save the leg if possible; if after all the means brought to bear upon it fail, there is a "dernier resort"—amputate it. So with the tooth; if after the tooth has been skilfully treated, and it can not be cured, then, and not till then, you may remove it.

I have within the last three months had at least a dozen teeth to treat, that were pronounced incurable by others. Speaking of others failing to treat and cure disease of the teeth, reminds me of two brothers—both graduates of "Ohio Dental College." (I give their place of education, not as a criticism on the institution, but to show how they fail to try to do what they were instructed to do in the valedictory address, "Do all you can.") They say that after a tooth has once ached, that it is no use to fill it. That it will be sure to give trouble, etc. I was in their place of business (I will not call it an office) some time since. While there, a gentleman came in, and asked them to fill a tooth for him, at the same time remarking it had ached. He refused to fill it. The man has since called on me for the same operation. These same "*graduates*" have not taken a dental periodical for seven years. They discontinued the Register at that time. Now, I don't take the Register as my Bible, but for my part I don't see how a dentist practicing his profession can get along without it.

My process is about the same that it was five years ago. I destroy the nerve with cobalt and creosote, sometimes with arsenous acid. Treat with solution of chlorate of zinc, creosote, and sometimes Teft's anæsthetic. After the parts are free from soreness, I fill fangs with gold foil and creosote. I most always saturate a small pledget of cotton with creosote, and put it up in the fang as far as I can. The creosote forms an insoluble compound with any remaining particles of nerve or dentine, so that it matters not in as small a place as that, whether all the

impurities are removed or not.* After the fangs have been filled from one to six weeks, owing to the extent of the disease, if there are no signs of returning pain, I fill the balance of the cavity, and will say that I have not lost one case in twenty. In some cases, I have filled the crown cavity with os-artificial, which I prefer in cases where the filling is not exposed to the food in eating; in that event, I prefer gold—the former being more liable to wear or wash out. My experience is, that the os-artificial is a very poor conductor of heat, which I think in fang filling is a very important point. I do not put it in the nerve cavity, from the fact that in some teeth it softens the dentine in the fangs, and in some cases it produces inflammation for a short time, and for these I prefer other and more reliable materials. As to crown cavities, they are surrounded with more dense bone than the fangs. It is drier, and consequently is not so liable to be affected. The reader might say, if you use it in one case, why not in all? I only use it in cases where the result would be more uncertain with gold. If I fail with the former, the loss to the patient is not so great as in gold. I filled a tooth on the first of November last for a gentleman of this place, as described above. A few days ago we were talking about it, and he said that he had not had the slightest trouble since it was filled. I have others of the same kind, but will not refer to them. They are all in good condition.

We give our readers the above interesting selection from the July number of the "*Dental Register of the West*," on the treatment of exposed nerves and filling cavities, a subject of great importance, and one in which of late years, dentists have taken great interest. Of the many formerly, but few good practitioners are now left, who condemn any and every means of preserving a tooth, the vitality of which has been destroyed. Our mode of treatment in these cases, corresponds with that of Dr. S., excepting in a few particulars. We destroy the nerve with creosote and arsenic, in cases of inflammation of the pulp, and when impossible to remove it without giving great pain. After removing the application, we do not again treat until ten days or a fortnight afterwards. On excavating the pulp cavity after that length of time, we treat from day to day, with creosote and tannin, until all sensitiveness has been removed. We agree with

* We think it important to remove every particle of loose tooth-bone or other substance from the canal, leaving the clear clean bone. It is best to urge the most perfect practice in every particular. More is sometimes taken from such admissions than is intended.—Ed.

Dr. S. that the presence of any particle of nerve, in the extreme point of the fang, does not exert any deleterious influence; provided a small pledget of cotton saturated with creosote and tannin, be placed in the fang or even in the pulp cavity of a molar tooth, and the filling packed up against it. When we use Townsend's Amalgam, we generally plug the pulp cavity with Hill's Stopping, an excellent non-conductor, and answering a very good purpose in such cases.

We respectfully disagree with the editor's remarks, and do insist that too much importance is placed, or pretended to be placed upon "*hacking*" and "*cutting*" the small portion of tooth-bone, claimed by the fang. We think it is enough if the pulp cavity is well cleaned, without wasting time, in removing a microscopic particle of nerve in the extreme point of the fang. Indeed, in spite of their professions, we really doubt whether two practitioners out of every ten, who boast of their fang fillings, really do it.

A. T.

QUESTIONS OF A CORRESPONDENT.

Dr. D. asks the following questions, and desires an answer to each.

1st. Would you extract a rather firm *first* cuspid tooth for a girl æt. 15 years, with a *beautiful* set of teeth inclusive? There is some evidence of the permanent tooth inside. Would taking out the temporary tooth enable the permanent tooth to come sooner or better? What is best?

2d. A child, five years old, has a central superior incisor and a first temporary molar dead, and alveolar *abscesses* from their roots. To what extent is an abscess with a secretion about a permanent germ injurious?

In reply to the first question, we would say, that the propriety of extracting such tooth would depend upon two or three circumstances. If the permanent tooth is making progress, and is coming either outward or inward, making a perceptible fullness of the gum, the temporary should be extracted. In such cases, the permanent tooth only operates to a limited extent its part, in the absorption of the root of the temporary, and thus the latter may remain comparatively firm, even till after the permanent tooth is erupted. If the temporary tooth is firm, and there is no indication of the approach of the permanent, the temporary tooth should

not be extracted. Where there is a tardy growth of the osseous tissues, this condition is likely to exist.

A temporary tooth may be firm in its position, either from the attachment by the unabsorbed root, or a firm embrace between the contiguous teeth. Of course the operator should always determine in regard to that before attempting to extract.

If, then, there is an increasing fullness of the gum, occasioned by the approach of the new tooth, the temporary should be removed without respect to its apparent firmness. The permanent tooth will then come forward more rapidly, and more readily assume its proper position. There is no danger of contraction in such cases.

In answer to the second question. It is not always best to remove a temporary tooth from which there is an abscess. If the abscess occurs more than a year before the proper time for shedding of the temporary tooth, we would be disposed to retain the tooth, unless it occasions great irritation, and the discharge be of an acrid, offensive character. It would certainly be much preferable to endeavor by treatment of the abscesses, to render the teeth bearable to as near the proper time for shedding as possible. The simple secretion of pus by an alveolar abscess will not materially affect the permanent tooth, for usually the walls of the sac will prevent the pus from coming in contact with the tooth. The treatment of abscesses of the temporary teeth should, of course, be less heroic than that of the permanent, though in general character the same.

When the surrounding tissues are much involved, and the difficulty can not be easily controlled, then it is better to remove the offending tooth. In proceeding with such cases great care should be exercised.—*Dental Register*.

A LITTLE EXPERIENCE WITH LEECHES.

When young in the profession, practicing in a country town, we often felt the want of leeches. Older physicians told us they would die before we were ready to use them, even if we obtained them; but if they didn't, they certainly would immediately after using them. Now, we are ready to tell young physicians and dentists that they need never be without these desirable pets; for they are much more easily cared for than canary birds or kittens, besides being less noisy than the former, and less filthy than the latter.

We have kept two of them, since last fall, in a pint jar with a perforated lid, by merely supplying them twice a week with fresh rain-water. They have been used a great many times, and appear as lively in twenty-four hours after use as before. When they

have sucked themselves full of blood, we put them into a clean wash basin, sprinkle fine salt on them, and allow them to crawl and squirm till they disgorge, when we wash and return them to their home, with fresh rain-water.

Even the city dentist will find it less troublesome to keep them than to send for them when they are needed, while those in country towns must keep for themselves or do without.

We presume our brethren of the dental depots would furnish them to any of their customers when ordered.—*Dental Register*.

OBSERVATIONS ON PATHOLOGY.

BY ABR. ROBERTSON, D.D.S., M.D.

Some attention has been given to the very important subject of diseases of the general system originating in, or produced by, dental irritations of various kinds, by physicians and dentists; and much more since dentistry has become recognized as a distinct and an important branch of medical science than formerly. Many valuable observations have already been recorded on the subject, but they are so widely diffused through books and journals, and mostly in fragmentary paragraphs and sentences, as not to be readily available to either the general practitioner of medicine or of dentistry. Both "theory and practice" concur in proving it a question of serious importance, perhaps of more importance than is generally supposed. I therefore propose, as succinctly as possible, to collate some of these observations, and to add to them the history of some cases that have not yet been reported.

Dental irritation, in some way or other, is the cause, direct or indirect, of many diseases of the system, and of many deaths during all stages of existence, from infancy to old age.

Dentition, though a strictly physiological process, and one which, it would seem, need not—and, if we may judge from its effects on the lower animals, ought not—produce any serious disturbance of the economy, is the generally recognized cause of more deaths among children than any other; and until the general laws of health, and especially of hygiene, are better understood, or at least more carefully observed, will probably so continue.

Slight irritations, of various kinds, often produce grave results in remote organs, and in the whole organization. A particle of sand in the eye may produce intense fever. A nail in the foot, or a splinter in the hand, may produce tetanus. Dr. Armstrong (*Practice of Medicine*, p. 178) well says, in treating of the *general*

effects of local irritation: "This local irritation produces a change in the whole nervous system which we call general irritation; a term which we use to express the condition which the local irritation produces through the whole nervous system; but of the nature of which condition we are wholly ignorant." And yet the manner in which these effects are produced is, perhaps, as well described by him on the next page, as they well can be. Thus, "the *first* of these remote effects is referable to some change in the nervous system." * * * "The *second* of these effects is referable to some changes in the vascular system. The *third* change seems to be the combined change of the two former changes—a disturbance of the muscular system."

"With respect to the vascular system, inflammation affects the motion and velocity of the blood, and if it go on it changes the kind of blood, not only in the inflamed part, but probably also through the whole body."

Slight local irritations, then, may produce serious disturbance of the whole economy.

Teething usually causes more or less local irritation—sometimes inflammation—its effects being limited by the amount of irritation and the strength of the individual. Its most common manifestations, especially in children, as observed and recorded by many eminent writers, are apethæ, diarrhœa, entero-colitis, cholera-infantum, inflammation of the bowels, inflammation of the brain, convulsions, paralysis, eruptions of the scalp and of other parts of the body, swellings of the hands, feet, etc.

Some light may be thrown on the manner in which this kind of local irritation produces these most serious results, by the consideration of a case of paralysis, reported in a memoir on dental paralysis, (*Dental Paralyse*), by Dr. Fleiss, of Neusaltz, published in the *London Journal of Medicine* for 1850, translated from the *Journal für Kinderkrankheiten* for July and August, 1849.

This whole memoir is extremely interesting and instructive, but as it is somewhat lengthy, I shall offer only an abstract of the case on which it was founded.

Case.—Rudolph Meyer was at birth a strong, well-made child. His first dentition was easy, being attended only with slight indisposition, from which he soon recovered, and was apparently healthy till five years of age. At the end of his fifth year he was frequently troubled with loaded tongue, some fever, heat of head and flushed cheeks: these symptoms yielded to mild purgatives. From time to time he had, for a week at a time, restless nights; he cried out in his sleep, ground his teeth, got up as if to walk in his sleep, and was, though apparently well, very tired in the morning. One morning on awaking, after such a restless

night, he had complete paralysis of the left arm. This arm hung loosely by his side, the hand was very red, and the joints somewhat swollen. The child could not perform any movement with the limb—if it was raised, it fell as if dead as soon as it was let alone. The boy did not feel when the arm was pricked with a needle. He complained of no pain, was cheerful, played about, and scarcely troubled himself about his arm.

A great variety of remedies were employed. At first the cause of the paralysis could not be understood. An examination of the arm, shoulder, and spinal column showed nothing. An examination of the mouth made it probable that the paralysis was connected with dentition: the anterior milk molars were found lying half decayed in the gums, and near and between them were the edges of the permanent molars. We resolved to have the remains of the teeth extracted the next day, so as to make room for the next teeth. But on the same day the boy met with an accident which deprived him of life. Having been taken by his parents to see a relative in the country, he was thrown upon his head from the carriage, and died toward evening.

A careful post-mortem examination was made. There was a considerable fracture of the skull, and also injury of the brain, which was the immediate cause of his death. But the most interesting point was the state of the upper part of the spinal cord. This showed, in the vicinity of the roots of the brachial nerves, a very remarkable degree of vascularity; the membranes were here reddened, and the whole circumference seemed congested; the veins, at least, were fuller and more prominent on the left side than on the right. There was no true organic alteration to be observed, either in the spinal cord, or in the roots of the nerves, or in the brachial nerves, so far as they could be followed. On tracing the blood-vessels, it was found that the turgescence of the veins of the left side extended to the shoulder and neck, as far as the face, where all the vessels were fuller and more prominent than on the right side. The veins in the neck and sub-maxillary region were remarkably prominent. There appeared to be no doubt that dentition had produced this state of the veins, and, moreover, that this congestion having extended to the spinal cord, had probably produced pressure on the roots of the brachial nerves, and thus produced paralysis of the arm.

That the conclusion here drawn, that the paralysis of the arm was produced by the pressure upon the roots of the brachial nerves, caused by the congestion of the veins, there can hardly be a reasonable doubt, and that the irritation of dentition was the cause of the congestion, is perhaps as little doubtful, though the possibility exists that the decayed temporary molars, which by the record had produced inflammation of the gums, might

have been the cause of the irritation. But on either hypothesis, the case is an extremely interesting one, and confirms Dr. Armstrong's view of local irritations producing their effects, in some way, on the nervous, the vascular, and the muscular systems.

I have in mind a case which made a very powerful impression on my mind many years ago, of a child who suffered most severely from a persistent and uncontrollable diarrhœa, which was greatly relieved and made a speedy recovery after lancing its gums where several teeth were coming; but as similar cases are not very rare, I will not encroach on your too limited space by describing it.

Since dentition produces irritation, which is the admitted—the known—cause of a great variety of serious diseases, it becomes an interesting inquiry how and in what manner it produces this irritation, and where is the chief seat of this irritation.

The general impression seems to be that it is chiefly, if not altogether, in the gums, and caused by the advance of the crowns of the teeth through that substance. That such is the fact in some cases, and to a certain extent, I have no doubt; but that this is the principal cause, or that, in most cases, the gums are the chief seat of the irritation, I am not prepared either to admit or to believe.

The causes and source of the irritation of teething are principally two: one at each end of the tooth—the cutting or grinding surface, and the end of the root.

That at the edge of the tooth is produced by its forcing its way through the gum. This usually produces more or less irritation, and sometimes inflammation, but generally slight; sometimes none at all.

From this cause mostly occurs stomatitis, aphthæ, etc., and, perhaps, sometimes from translation of inflammation, inflammation of the bowels and stomach, resulting in indigestion, diarrhœa, cholera infantum, etc. But the graver diseases, (including generally the three last named,) as convulsions, paralysis, and the like, I am persuaded occur from irritation at the other extremity of the tooth—at the end of its root. This proposition seems to me plainly deducible from several considerations:—

First, the gums are not a very sensitive tissue. They are designedly so constituted as to be able to endure the contact of hard substances and a considerable degree of pressure, such as would bruise most other parts, without serious inconvenience, if not with impunity; while a constant pressure, however slight, on any considerable branch of any nerve is always painful, and may be the cause of serious irritation.

The second consideration is deduced from the manner in which the teeth are formed and evolved through the gums.

The crown of a tooth is first formed. It is fully formed deep under, or within the gum. The root is then formed by successive additions to the base of the crown; and the crown is thus forced to the surface and through the gum. The resistance of the gum causes this deposit to press upon the nerve in its canal in the jaw, and thus causes irritation and pain and fever, and the whole train of diseases that follow local irritations.

This may be clearly demonstrated by the immediate and most marked relief so often afforded to children by lancing their gums. Thus, a child may be brought to the physician or to the dentist, screaming with pain. On examining its mouth, it may be seen that one or more of its teeth are nearly ready to pierce the gum. The gum may be but slightly reddened by inflammation, and, perhaps, not at all; but its edge, where the teeth are coming through, almost pearly white from the tension upon the edge of the tooth. A slight incision here affords immediate relief, and the child directly falls asleep; while the cut has been so slight as scarcely to cause a trace of blood to follow.

It is true that the pain caused by inflammation may sometimes be greatly relieved by free scarification of the part, thus relieving the over-distended vessels of their engorgement; but in such cases the relief is not immediate. but, on the contrary, the pain for the time is often exacerbated; and when relief comes, it has been produced by the flow of blood. While in the case of the child, there has been no flow of blood, and still most marked and *immediate* relief, and the inflammation, if indeed there was any, so slight as scarcely to be perceptible. The relief, then, must have been afforded in some other way; and that other way has been that so soon as the tense and somewhat elastic gum was cut, the tooth was freed from the pressure which forced the point of its root against the nerve at the bottom of its socket.

It is precisely in this manner that such intense neuralgic pains are often experienced in connection with the coming of the wisdom teeth. Thus, when a wisdom tooth happens to lie horizontally, or nearly so, in the jaw, with its grinding surface impinging against the posterior part of the second molar, the wisdom tooth is impeded in its progress, and the extension of the root then bears upon the nerve where the branch is given off to supply the tooth, and thus produces all the troublesome train of symptoms sometimes attendant on this malposition of these teeth. Hence filing spaces between some of the anterior teeth, as is sometimes done under the absurd notion of "lateral pressure of the teeth," by relieving the pressure at the point of the root, often affords relief.

On this subject I may say something more at some future time.—*Dental Cosmos*.

ARTIFICIAL TEETH.

TESTIMONIALS

To the excellence of our manufactures, from Dentists of the purest character and greatest skill, flow upon us tumultuously with a warm welcome. Mingled with a conscious pride that we have attempted to merit this grateful praise, is the determination that we will spare no labor, no effort, to win and maintain the very highest niche in manufactural excellence. The conviction is forced upon us by the concurrent testimony of best judges in the profession, that our artificial teeth are among the best now manufactured in the world.

JOHNSON & LUND.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's; having used nearly all others.

JOHN L. CLARK.

Waterloo, N. Y., October 29, 1861.

MESSRS. JOHNSON & LUND:

Gentlemen—Having used your Teeth in my practice for the past year, and finding them *superior* to all others in *beauty, natural appearance* and *durability*, I hereby add my humble testimonial in their favor.

Yours respectfully,

B. F. CLARK.

Flint, Michigan, Nov. 18, 1861.

I have used Teeth of the different manufacturers of Philadelphia of ten years past, and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their resemblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blow-pipe, show that the proportion of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN.

Philadelphia, December 20, 1861.

This is to certify, that we have used the Teeth of Johnson & Lund, of Philadelphia, and think them superior to all others in use.

CONKEY & FRENCH.

Elmira, N. Y., Sept. 9, 1861.

The Teeth of Messrs. Johnson & Lund's manufacture I am using in my practice, and can find no fault with them.

G. B. BROWN.

Danville, Pa., Dec. 19, 1861.

This is to certify, that I have used the various and most of the different manufacturers' teeth for the last eight years, and now give to Johnson & Lund's the choice; deeming them as combining the most desirable qualities looked for in artificial teeth; such as naturalness of color, shape, symmetry and beauty of arrangement, comeliness of expression in the mouth, and strength and firmness for use.

R. WALKER.

Owego, N. Y., Oct. 1, 1861.

We find Johnson & Lund's Teeth a superior article, and are better satisfied with them than those of any other make which we have used.

JOHNSON & SNOW.

Hornellsville, N. Y., Oct. 24, 1861.

This is to certify, that I have bought of Dr. M. Frank, Johnson & Lund's Teeth, and consider them, without exception, the most beautiful I ever saw.

S. B. HYATT.

Lock Haven, Pa., Dec. 16, 1861.

Having used Johnson & Lund's Teeth for the last year, I find them to be all they recommend them to be, for strength, durability and adaption to all the various uses met with in our practice.

N. B. LAUNY.

Corning, N. Y., Sept. 27, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and am happy to say that they are superior in every particular to any in use.

Homer, N. Y.

A. H. MATSON.

MESSRS. JOHNSON & LUND:

Gentlemen—I am in receipt of your second lot of teeth; they are life-like and beautiful. Your teeth *stand fire well*.

Yours truly,

W. A. CHITTENDEN.

Scranton, Pa., Dec. 21, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, of Philadelphia, and consider them equal in every respect to any I have ever used, and very cheerfully recommend them to the profession.

F. H. GUIWITS.

Avoca, N. Y., Dec. 13, 1861.

Having used Johnson & Lund's Teeth to my perfect satisfaction, I would earnestly recommend them to Dentists in search of a superior article, and one that will always please.

S. F. TREMAIN.

(Of the Firm TREMAIN Bro's.)

Rome, N. Y., Nov. 12, 1861.

I have used artificial teeth of the different manufacturers of this country, and do honestly believe Johnson & Lund's to be superior to all others in the various necessary and indispensable qualities desired by the dental profession.

H. M. SHEERAR.

Wellsville, N. Y., Oct. 24, 1861.

Having used the Teeth made by Johnson & Lund, (M. Frank, Agent,) I take pleasure in recommending them as equal to any teeth I have used for the rubber work.

A. N. PRIEST.

Utica, N. Y., Nov. 13, 1861.

MESSRS. JOHNSON & LUND:

Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers; they are very much admired, particularly by the ladies; for their beauty and natural appearance in the mouth.

Yours respectfully,

E. C. KESTER.

Danville, Pa., December 19, 1861.

DENTISTS!—If you want a strong and natural looking artificial tooth, use the teeth manufactured by Johnson & Lund, of No. 27 North Seventh Street, Philadelphia, Pa.

Yours professionally,

L. D. EVELAND.

Milton, Pa., December 18, 1861.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession *as a decidedly superior article.*

F. O. HYATT.

Cortlandville, N. Y.

Philadelphia, November 25, 1861.

Messrs. JOHNSON & LUND :

Gentlemen—You asked me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The *beautiful shape*—the *life-like* and *natural* shades, and their *strength* under the *blow-pipe* and *hammer*, render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth deserves the thanks and substantial support of the dental profession. Wishing you success, I remain,

Yours truly,

M. LUKENS LONG.

Messrs. JOHNSON & LUND :

Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*

A. H. FOWLER.

Ithaca, N. Y., November 7, 1861.

Ithaca, N. Y., Nov. 7, 1861.

We have used in our practice for sometime past, teeth manufactured by Messrs. Johnson & Lund, and can speak highly of them in every respect.

BARTLETT & HOYSTRADT.

Lockport, N. Y., Oct. 17, 1861.

I have used teeth manufactured by Johnson & Lund, of Philadelphia, and like them much. Their color and shapes are admirable.

W. BRISTOL.

Philadelphia, December 7, 1861.

Permit us to say that your Artificial Teeth are excellent; they must eventually find their way into every dentist's laboratory throughout the country.

C. BENESOLE & SON.

Medina, N. Y., October 17, 1861.

Having used *Artificial* Teeth of the various manufactures, and having had occasion to use those manufactured by Johnson & Lund, we can speak of them in the *highest terms* as to *strength*, *beauty* and *adaptability* to the various styles required in artificial dentures. Their appearance in the mouth is natural and life-like.

A. V. BELDING & SON.

I use Johnson & Lund's make of Artificial Teeth and can recommend them as being perfect in every particular; they give *complete satisfaction* and leave nothing further to be desired.

J. M. BARRETT.

Wilkesbarre, Pa.

Messrs. JOHNSON & LUND:

Gentlemen:—I have used your Teeth for some time and consider them fully equal, if not superior, to any others manufactured.

Yours respectfully, E. SHELP.

Wilkesbarre, Pa., December 25, 1861.

Having inserted a number of Teeth manufactured by Johnson & Lund, it gives me great pleasure to recommend them to all dentists for their unsurpassed natural and life-like appearance, being satisfied that they stand the action of the fire and blow-pipe as well, if not better, than any manufactured.

AMBLER TEES.

1700 Vine Street, Philadelphia.

I have used Johnson & Lund's Artificial Teeth and believe that they combine all the qualities required by the dentist in a higher degree than those of any other manufacturer.

P. B. MERWIN.

Delhi, N. Y., Oct. 7, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and think them exceedingly beautiful and life-like.

HARRISON STICKER.

Milton, Pa.

Having used a variety of Teeth prepared by different manufacturers, I cheerfully give my preference to Johnson & Lund's; believing them to combine more excellencies with fewer defects than those of any other manufacturer.

W. H. WOOD.

Cuba, N. Y.

I have been shown samples of Gum Teeth manufactured by Johnson & Lund, of Philadelphia, and think them exceedingly beautiful and life-like.

GEO. E. HAYS.

Buffalo, N. Y., Oct. 21, 1861.

Messrs. JOHNSON & LUND:

Sirs—I have used your Teeth of all kinds, and find them the best adapted for all uses of any I have yet tried.

W. C. ORCUTT.

Groton, Tompkins Co., N. Y.

We are in receipt of Johnson & Lund's Teeth, and in our judgment they have combined in their manufacture all that is necessary to represent natural teeth.

GEO. W. TRIPP,
L. MATSON.

Auburn, N. Y., Oct. 30, 1861.

I have for some length of time used Artificial Teeth of Messrs. Johnson & Lund's manufacture, and do not hesitate in saying that I find them superior in every respect to any others in use.

B. F. GOODWIN.

Ithaca, N. Y., Nov. 1861.

The improved Teeth of Johnson & Lund, are, in my judgment, of beautiful form and life-like in appearance.

D. S. GOLDEY.

Oswego, N. Y., Nov. 22, 1861.

If there is such a thing as perfection in the manufacture of artificial teeth, Johnson & Lund have certainly attained it.

E. J. LARASON.

Philada., Dec. 4, 1861.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and consider them superior to any in use as to strength, appearance and durability.

J. D. GRISWOLD.

Avoca, N. Y., Dec. 13, 1861.

Having used your Teeth in my practice for some time, I find that they possess all the qualities you claim for them. They are certainly very superior.

J. W. KNOX.

Philadelphia, Dec. 6, 1861.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and can cheerfully recommend them as decidedly superior.

L. EATON.

Elmira, N. Y., Dec. 10, 1861.

I have used Johnson & Lund's artificial teeth for a sufficient time to test their utility, and consider them equal, if not superior, to any others now in use.

WM. M. LOAG.

Port Deposit, March 25, 1862.

Having used Johnson & Lund's Teeth, I can cheerfully recommend them for their superiority in strength, appearance and durability, to any in use.

A. S. RHOADS.

Williamsport, Pa., Sept. 25, 1861.

Having been in the profession of Dentistry for the last twenty-five years and used all the different manufacturers' teeth, I would recommend Johnson & Lund's as equal to all others as to strength, appearance and adaptability to the case.

JOSEPH ELMENDORF.

Penn Yan, N. Y., Sept. 26, 1861.

Messrs. JOHNSON & LUND :

Dear Sirs—Having used Teeth of different manufacturers, I find that yours, for adaption and beauty, stand "Letter A. No. 1."

J.R.SELOVER.

Bath, N.Y., Dec. 14, 1861.

Messrs. JOHNSON & LUND :

Gents—Yours of the 5th inst. came to hand all right, for which please accept my thanks; and not only would I wish to express my unqualified approbation and thanks for the very frank and prompt manner in which you have done business with me so far, but for the superiority of your teeth over other manufacturers', in strength, appearance and ability to stand fire. One block of those last sent, are to my notion, perfect in point of color and shape.

Yours truly,

L. A. ROGERS.

Grand Rapids, Michigan, Oct. 16. 1861.

The Teeth of Johnson & Lund's manufacture I have used I can find no fault with.

H. GERHART.

Lewisburg, Pa., Dec. 1861.

Having used the Teeth of Johnson & Lund, of Philadelphia, I can truthfully say, that they are as good as any I have ever used, and can recommend them to the dental profession.

J. A. CHASE.

Geneseo, N.Y., Oct. 25, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them fully equal, if not superior, to any now in use.

JAMES R. SNOW.

Phelps, N.Y., Oct. 29, 1861.

Dr. M. FRANK :

Dear Sir—In reply to your inquiry, it gives me pleasure to say, that having used Teeth of many different manufacturers, I find those made by Johnson & Lund, in every respect equal, and in some respects superior, to any others.

L. K. GARFIELD.

Watkins, N.Y., Dec. 11, 1861.

Messrs. JOHNSON & LUND :

Dear Sirs—Having used your Teeth, and being pleased with them, I can recommend them to the profession as being superior to most of the teeth manufactured.

W. H. KLOCK.

Little Falls, N.Y., Nov. 14, 1861.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them superior as to natural appearance, beauty and strength to any in use. C. J. WADSWORTH.

Cooperstown, N. Y., October 6, 1861.

MESSRS. JOHNSON & LUND :

Gents—Having used your Teeth to my entire satisfaction, I would cheerfully recommend them to the careful consideration of the profession. I. L. ANDREWS.

Milton, Pa., Dec. 18, 1861.

MESSRS. JOHNSON & LUND :

Dear Sirs—Having used your Artificial Teeth for the past year in my practice, with many other kinds, I consider them as good and containing as many good qualities as any others that have come under my notice. W. F. EDINGTON, D. D. S.

Geneva, Oct. 28, 1861.

I have examined samples of Messrs. Johnson & Lund's Artificial Teeth, and think them equal to any I have seen, in form, strength and beauty of finish. B. T. WHITNEY.

Buffalo, N. Y., Oct. 21, 1861.

Philadelphia, February 18, 1862.

MESSRS. JOHNSON & LUND :

Gents—Having for the last two years, used your Teeth almost exclusively, I can say with pleasure they are the best and most satisfactory under all circumstances ; and therefore I recommend them to the public with great satisfaction.

Very respectfully,

F. A. WARE,

No. 646 North Tenth Street.

MESSRS. JOHNSON & LUND :

Gents—Having used your Rubber teeth for some time, I am fully convinced that they possess all the qualities desired by the Dental profession. WM. S. BITTNER.

Altona, May 9, 1862.

MESSRS. JOHNSON & LUND :

Dear Sirs :—I have for some time used teeth of your manufacture—also, those of other manufacture ; yours, in particular, with entire satisfaction. I think I can with all propriety say that they are a combination of strength, beauty and durability ; also, that they combine smoothness, uniformity and life-like appearance in their construction. S. W. DICKERSON.

Trumansburg, N. Y., March 15, 1862.

Messrs. JOHNSON & LUND:

Gents—I have used your Teeth and I think they are of the best that are manufactured either in New York or Philadelphia.

H. C. HOWER,

Bloomsbury, Pa., Dec. 19, 1861.

This is to certify that I have used Johnson & Lund's block teeth and I consider them equal to any I have ever used, if not superior, and I have used four or five different manufacturers'.

L. D. RANK.

Williamsport, Pa., Sept. 21, 1861.

DR. MONROE FRANK,
GENERAL TRAVELLING AGENT
FOR THE SALE OF
JOHNSON & LUND'S
IMPROVED ARTIFICIAL TEETH,
RESIDENCE—CORTLAND, N. Y.

MECHANICAL DENTISTRY.

—O—

We have secured the services of a first-class Mechanical Dentist, and are now able to put up in the best possible style every kind of Artificial work : including

SINGLE GUM or PLAIN TOOTH WORK,

CONTINUOUS GUM WORK and BLOCK WORK.

LIST OF PRICES.

FOR PLATE WORK—SINGLE TEETH.

Striking up plate,	-	\$1 00		Mounting per tooth	-	\$0 30
Extra charge for Teeth and Plate.						

FOR BLOCK WORK.

Carving and fitting blocks to plate, per tooth,	-	-	-	\$0 50
When soldered and finished, ready for the mouth,	-	-	-	1 25

FOR CONTINUOUS GUM WORK.

Lining, soldering and baking set,	\$10 00		Repairing one tooth,	\$3 00
Repairing each additional Tooth,	-	-	-	1 00

JOHNSON & LUND,

No. 27 North Seventh Street, Philadelphia.

LIST OF PRICES.

TEETH.

READ THE TESTIMONIALS PRESENTED TO US BY MEMBERS OF THE PROFESSION.

Blocks or sections for rubber base, 18c		Single Gum Teeth, Plate Work, 18c
Single Gum Teeth, " " 18c		Plain " " 9c
Plain " " Rubber base, 9c		Pivot " " 8c

GOLD FOIL.

C. Abbey & Son's, per $\frac{1}{8}$ oz.	\$4 00		David Morgan's, $\frac{1}{8}$ oz.	-	\$3 50
S. S. White's, $\frac{1}{8}$ oz. \$3 50					

TIN FOIL, &c.

Johnson & Lund's, chem'l'y. pure, 50c		Townsend's Amalgam,	-	\$1 50
Os. Artificial, $\frac{1}{4}$ oz. \$1 00				

GOLD AND SILVER PLATE.

Gold plate, 18 carats, per dwt.,	\$0 90		Gold Wire, 18 carats, per dwt.,	\$0 90
" solder " "	0 90		" solder 14 " "	0 75
Silver plate, wire and soldered, per dwt., \$0 08				

PLATINA.

Plate cut to pattern, per dwt.,	\$0 38		Plate cut square, per dwt.,	\$0 35
Platina wire, per dwt., 40c.				

Bismuth, Asbestos, Tin, Lead, Zinc, and other metals, at lowest market rates.

THE DENTAL QUARTERLY.

VOL. 1. PHILADELPHIA, DECEMBER, 1862. No. 4.

DENTAL EDUCATION.

There are but very few who can boast of minds mighty enough to comprehend and digest the words and teachings of a professor of an art or science, so as to render such teachings of practical benefit to them, unless they have had previous experience in it, or in that division of it to which the attention is called. A student may commit to memory by aid of his pen, quickness of perception, and text books, interesting portions of a lecture, but unless accompanied by practical applications to present use, such portions even will become confused and soon remembered no more. We have not therefore been slow to point out to those aspiring students whose experience in the laboratory has scarcely exceeded that of twelve months, and in the office none, and who have remarked to us, "I am going to attend a course of lectures at the Dental College this winter!" the mistake of their over-anxiety and haste to complete their education. We would also, considering it the duty of a journalist, lay before our young readers, the same idea of a programme for a successful prosecution of the labors and study necessary to make a good dentist, which we have given verbally to the young men alluded to above.

We would not have them attend, as so many are anxious to do, a Dental or Medical College at once. As will be acknowledged by all candid and unprejudiced reasoners, the mind should be prepared to receive the instruction there given, and be able to comprehend the various branches taught, through

all their ramifications and intricacies. This cannot be done until they have practised in the laboratory and office long enough to familiarize them with their respective duties, and to become acquainted with and masters of every manipulation. This of course will be accomplished best under the tutelage of an experienced practical man, one who will take delight in holding the torch and leading the way, while they explore the labyrinths of Dental Science. Such a preliminary course should be taken during a period of from two to four years, the amount of time depending much upon the mechanical ingenuity and diligence of the student.

It speaks well for the profession, that the practice of demanding a high fee for instruction, is almost wholly out of date—a practice serving to keep young men of genius, but of slender purse, out of its ranks, and admitting those who study or pretend to study merely for the sake of a calling. We would even advise young men of means who contemplate studying, rather to seek an office where they will be remunerated for their time, receiving salary enough to support them, than to pay hundreds for the privilege of entering and enjoying the mysteries of the *sanctum sanctorum*. In the first instance, it is probable, they will diligently apply themselves to practice, improving the time and earning the money they receive—whilst in the other, the spirit of “no man’s my master” will be nursed, idleness encouraged, and every kind suggestion on the part of the instructor be met with such thanks as “I’ll do as I please!” or “My way is the best!” or the muttered assurance, “I am not paid for doing your dirty work!”

During the time spent in the laboratory and office to which we have referred, the mind should be burdened only with such studies from text books and periodicals, as will prove useful upon such operations as demand the immediate attention. For this purpose, it may be well in conjunction with the judgment of the instructor to have one or two text books, and, if means will permit all the dental journals at hand, from which may be extracted useful and practical ideas pertaining to the case under supervision. Although we would deny at this stage, the study

of indiscriminate subjects from text-books and dental journals, we do not wish to be understood as denying them as reading matter. Indeed, it would be well to occupy the spare time in this way, and if fraught with any beneficial results, well. But we have seen so much of the absurdity and folly of expecting a fresh student to commit to memory, and thoroughly understand the origin and insertion of muscles, their uses, &c., which a man of experience and scientific attainments finds difficult to master, that we are constrained here to give warning to the uninitiated, of the time wasted, and the vexation and care consequent upon the inability, nay, impossibility, to remember and make available, such intricate, and at such a time, useless studies. These can be left until this course is finished, and they may with profit devote their time to them. When their names are enrolled as successfully graduated Doctors of Dental Surgery, they will be an honor to the College, and ornaments to the Alumni and to the profession. A. T.

TREATING NERVES AND FILLING PULP CAVITIES.

BY DR. J. T. ABBOTT, FABIUS, N. Y.

Much has been said and written on the subject of treating and destroying nerves, and filling pulp cavities. Believing that, "*in a multitude of counsel there is safety*," I endeavor always to glean from the practical observations of others, compare them with my own, and profit by the result of such comparison.

I have for several years, with good success, been in the habit in cases of exposed nerves, of destroying the nerve and filling generally with gold foil. I have tried, as many have recommended, to cap the nerves; in some instances they have appeared to do well for a time, varying from one to two years, but in the majority of cases I have met with poor success. Doubtless the labor of others has been better rewarded either in capping, or in filling over the exposed nerves with Osteoplastic filling. My

plan now, invariably, is to destroy the nerve with paste, (made from Dr. J. D. White's formula,) when I find the nerve plainly exposed. I leave it in the tooth from twenty to twenty-four hours, then extract the pulp, unless I find it only partially destroyed. In that case, I make another application, leaving it in over night. In certain cases, where I find no soreness or inflammation, I fill at once, after thoroughly cleaning the cavity; if the crown of the tooth is sufficiently strong, I use adhesive gold foil; but when the crown is much decayed and liable to break in condensing the gold, I use the Osteoplastic for filling the crown, after having first filled the pulp cavity with gold. In many instances, I put in the pulp cavity a small pledget of cotton saturated with creasote, closing the cavity with cotton and wax mixed, to prevent the escape of creasote, and then dismiss the patient for two or three days. If, after that length of time, there is an unhealthy appearance or soreness, I proceed as before until the soreness is entirely gone. I usually find the cavity ready to fill at the end of six days. I often find it necessary to renew the application daily or every other day; being governed in that respect, by the general health, temperament and constitution of the patient.

It is sometimes very difficult to extract all the minute particles of pulp and nerve; in such cases, when I fear there is some remaining, I put a piece of cotton (size of small pin head,) saturated with creasote, as high up in the fang as possible. I introduce the first piece of foil, so that when condensed, it will force the creasote into the minute canals that the excavators have failed to reach. I avoid pressing the first piece of foil firmly, being governed by the sensibility of the patient.

When the nerve has been previously destroyed, it frequently requires more time and different treatment. I will cite one case among many of like character.

Mrs. N., aged thirty, of venous sanguine temperament, called at my office to have the superior lateral incisor extracted. It had been filled with gold about six months previous, was very sensitive to the touch, the gum was much swollen, presenting a dark, turgid appearance. She informed me that it was very sensitive

when filled, but gave her no trouble for about five months. She then experienced a dull pain, increasing at times until it became unendurable. In accordance with my advice, she allowed me to remove the filling and endeavor to save the tooth. I found the pulp and nerve dead; considerable pus discharged; used local external treatment.—*Chlo. potass. Plumb-acet.*—rinsing the mouth frequently with astringent gum washes. I left the cavity open one week, in the interval frequently cleansing it with chlorine. I then thoroughly excavated the cavity, applied a pledget of cotton saturated with creasote and covered with wax. This I changed every third day. At the end of the third week, the gum assumed a healthy appearance; there was no soreness either in tooth or gum. I then cleaned and filled as usual with creasote, at extreme point of the fang. Two years have elapsed, and, as yet, the lady has experienced no trouble with the tooth.

Many cases of like character, with similar treatment and favorable results, might be introduced here from my diary, but the above I consider sufficient for present illustrative purposes. I have simply stated my mode of treatment. Others, treating in a different manner, may be as sanguine and successful as myself, but as I have above remarked, "*In a multitude of counsel there is safety.*"

NEW METHOD OF BANDING PLATES.

BY DR. J. H. PARMELEE, MILFORD, N. H.

I have read the article on "Swaging and Finishing Plates," which does not differ materially from the method which I employ. I have worked silver very much, especially of late, and find that in putting up sets on that base I have made a little improvement which I will endeavor to describe.

It consists in making the plate whole, so that when finished there is no slit, consequently no solder. It is not necessary to make dies with flanges to turn the plate. The edge, after striking in the usual manner can be turned over a small steel tool with a hammer, and (after annealing) with a mallet I flat-

ten it down to the plate, and let it remain until the plate is fully formed. Then with a tool, formed for the purpose, (placing my plate on the male die, and holding it firmly in its place,) I turn the binding up to its required position. If in this operation the plate becomes warped, I make a new female die on which I can strike my plate again without interfering with the binding. This die is easiest made by leaving the sand even with the alveolar ridge on the outside; then with a curved chisel cut into the die where the binding naturally comes, in the same manner that a blacksmith creases a horse shoe. This operation raises the lead exactly where you wish it, and gives the binding fair play. I then cleanse my plate, anneal, and strike for the last time. Castile soap is better to put upon the dies than oil, as no metal will adhere to a plate that has been well soaped.

Speaking of investments. I use a strip of sheet iron, one quarter of an inch in width, bent horse shoe shape, leaving a space between the iron and teeth of three-eighths, or half an inch; then another across the top with an angle. By working in this way, I never experience any trouble with cracking, or plate warping.

I do not know that I have enlightened any member of the profession, or thrown any light at all; if I have, here it is—if not you may throw this into the fire.

SWAGING AND FINISHING PLATES.

(CONTINUED.)

Lower sets of artificial teeth are sometimes mounted on plates of such thickness, that, we believe, did not the dentist resort to the "*building up*" process on the ridge, it would be a very difficult matter with ordinary dies to obtain a perfect, or even a comfortable fit; and even by resorting to the above method we doubt whether the plate is even made to fit the jaw. Such plates will rarely be found to have a rim or band, which we con-

sider necessary to strengthen and to have them worn with comfort. If banded, they generally consist of wire or narrow strips soldered on, a warping and not very easy method of accomplishing the end. We are not in the habit of using a plate of greater thickness for the lower than for the upper—and in both cases choosing one as thin as will insure a perfect fit on the plaster model, and a guard against warping. It will be of course best for the dentist to find out the exact number by experience—the guage plates varying so much, that we could not here safely give it. Thick plates tending to batter down the dies, and being in our estimation of no practical advantage, but a source of much trouble, our object in condemning them will be found to be not wholly without good intent.

We make dies for lower sets of zinc. The shrinkage of this metal will generally, we might say invariably, be found to be in the centre of the cast, rarely if ever affecting the ridge, except where bad or worn out metal is used. Being of greater hardness than tin, and requiring less care in working, we prefer it to the latter metal. It is not well to use it after being melted several times—the action of the fire serving to spoil it, if the same die is melted over half a dozen times. Very often it may be ruined in the first and second fusing; great care therefore should be taken with it. A dull coal fire, with the heat increased by wood, being the best. Let it melt slowly, and avoid getting the cup red hot.

In preparing the plaster model for rimming or banding the plate, when the ridge will allow it, it might be well to build on the plaster or wax, at such an angle as will approximate to the final position of the band, providing it will not interfere with moulding. If successfully moulded in that way, the band can be burnished more easily to its place after soldering. The inner rim of lower plates in silver or gold work should be turned over and burnished down against the plate after the first swage. This may be done by means of a smooth-mouthed pair of pliers. A notch should be cut on a line with each cuspid tooth, to guard against springing, then swaged and soldered with fine solder. A wire edge will then be given to the play of the

tongue, an accommodation to the gum and to the strength of the plate. After swaging with the new dies, trying in the mouth and getting articulation, we can proceed to adjust the teeth.

No artificial work taxes the dentist's patience more than lower partial sets. No general rules can be laid down to govern these cases—the manipulator's judgment and mechanical ingenuity, must therefore be his chief guide. In one case it may be necessary to apply the means used in surmounting the peculiar difficulties of several other stubborn ones. We will therefore make but few remarks on this kind of work, confining our space to our method of treating those sets which more frequently come under the care of the dentist.

Where the front natural teeth are left in the mouth, and artificial bicuspid and molars are to be inserted, it not unfrequently happens that the strip connecting the right and left sides is narrow and too weak to stand the wear from eating—the latter necessary occupation often splitting it. It is our custom to strengthen it, by swaging and soldering a duplicate piece over it, continuing this piece one-eighth of an inch beyond the commencement of the ridge, and making it to overlap it. In this way we avoid using a thick plate. We treat the bands in the same manner as in whole sets, soldering on the inside, and burnishing up over the gum portion of the teeth on the outside. A pretty job may be made, by grinding off the edge of the bicuspid and molars, and making curved or half round backings, in imitation of the natural teeth. Unless a catch be made on the natural teeth adjoining, these lower partial sets should be articulated slightly longer than is needed, even preventing the upper natural ones closing, especially if the whole of the latter be perfect. In the course of a few weeks, the upper antagonizing teeth, with other causes, will make the set compress the gum, and to a degree sink into it, and thus make the articulation perfect; whereas in that course of time it would be imperfect, were the teeth articulated regularly in the first place. Where a partial upper set is needed too, we think it would be advisable to insert the lower ones at least a month prior to the upper. By that time the latter will be settled on the gum, and the former can be articulated with certainty.

"I have been fifteen years in practice, and yet find that I am continually learning something in the way of artificial work," was remarked to us by a dentist of no ordinary attainments, on finding difficulty in fitting a lower set. We might add, that after he has practiced one hundred years, if by good fortune he practices that length of time, he will find that concerning these lower sets, he can still learn something. As no two mouths are alike, so no two cases can be made in the same way; and as we have before remarked, unless the dentist possess originality, genius and perseverance, success is almost impossible. Every case in which he makes a fit and suits his patients, will be by chance. One fatal error we have discovered in making lower sets is, that they are made to fit *too well*. To use the language of a dentist of our acquaintance, who had discovered his mistake, "We found that these plates bound so much that our patients would be continually returning to us, to have the edges filed off. We now build up around the ridge where the band commences, enough to allow the muscles to have easy play." We have no doubt that many practitioners can be found whose experience in this respect is the same. This *building up* is not what we mean by the *building up process on the ridge*. A.T.

MYRRH.

This substance, so useful to the dentist in the department of Theurapeutics, was among the first medicines known. As early as 1729 B. C. it was an article of commerce with the Ishmaelite merchants or traders. The first mention of it in Holy Writ is found in the twenty-fifth verse of the thirty-seventh chapter of Genesis:—"And they sat down to eat bread; and lifted up their eyes and looked, and behold a company of Ishmaelites came from Gilead with their camels bearing spicery, and balm, and *Myrrh*, going to carry it down to Egypt." With the ancients it was apparently highly valued, since we find it among the treasures of the wise men who came from the East to worship our Lord. "And when they had opened their treasures, they presented unto him gifts; gold and frankincense, and *myrrh*." It was much used

by them for its properties of preventing bodies from undergoing degeneration or putrefactive decomposition. Nicodemus, as mentioned by St. John, nineteenth chapter, thirty-ninth verse, "brought a mixture of *myrrh* and aloes, about an hundred pound weight," to embalm the body of Jesus. It was also used as a perfume, and was an ingredient of the holy ointment. Mingled with wine, it was frequently given as a stupefying drink, especially at executions. The same was offered to our Saviour, by the soldiers, at his crucifixion.

It is a gum or resin, as its name denotes, of a bitter taste, a light yellow color, and obtained like nearly all other gums—from the bark of a tree. The juice exudes spontaneously, and concretes upon the bark. It is a thorny tree, growing eight or nine feet high, having a whitish-gray bark, yielding a fruit of a brown color. The tree which now produces it grows in Arabia-Felix, and the north-east coast of Africa. The gum is carried to the East Indies, the market from which it is at present obtained. As it is of all qualities, a knowledge of it is necessary to distinguish the good from the bad. Since the powder is liable to adulteration, it is best to purchase it in lumps, those of a reddish yellow color being superior.

Formerly the best Myrrh was brought from the shores of the Red Sea, by the way of Egypt and Levant, and received the name of Turkey Myrrh. Inferior qualities were brought from the East Indies, and hence called India Myrrh. These titles, of course, have now ceased to be applicable. For a time the plant which yielded it appears to have been lost sight of; travellers have discovered other plants yielding a substance of the same appearance and properties, so that with certainty it cannot be determined; though many writers are persuaded that the Myrrh of commerce, at present used, called the *Balsamodendron Myrrh*, is the Myrrh of Bible times.

It is a stimulant tonic, the tincture of which is an important ingredient of the dentists' gum wash, and is useful of itself in healing and hardening spongy gums. The following is the proper proportion for the tincture—

3 pints of Alcohol.	
$\frac{1}{4}$ lb. of Myrrh.	A. T.

NOTICES OF BOOKS, &C.

We have received from Dr. C. H. Cleaveland, of Cincinnati, "*The Physician's Memorandum* for 1863," a Daily Remembrancer, Day Book and Record of Practice, which we desire to recommend to Dentists, as well as Physicians. It contains a list of Remedial Agents, with the usual mode of preparation, and the dose of each preparation; useful for reference, even to the dental practitioner. Perhaps, no work can be found in this country with so much useful matter, condensed to pamphlet or memorandum form. From the part devoted to "Accidents and Emergencies," we select the following:

Hemorrhage.—A full flow of blood may take place from a wounded vessel, and discharge externally or internally. If it discharges internally, and the wounded vessel cannot be reached directly, some *general principles* of treatment are applicable to all varieties of such hemorrhage.

Keep the patient quiet and cool, but do not allow the surface to become cold or blanched. Empty the intestines by means of copious injections of cool vinegar and water, and give internally either gelseminum, aconite, or veratium viride, to control and subdue the action of the heart.

Hemorrhage from the Jaw.—When persistent hemorrhage follows the extraction of a tooth, the socket should be thoroughly cleansed out, and then packed full with lint or cotton wet with collodion, and firm pressure on the packing produced by the opposite jaw.

Astringents do no good, for the bleeding vessel is an artery lining a bony canal, and cannot close up by contraction. Styptics may do good, and hence a drop of creasote applied to that part of the pledget that passes first into the socket is sometimes useful. But *pressure* properly applied, to keep the stream of blood from flowing until a clot forms within the canal, is found to be the surest mode of cure.

Dissecting Wounds.—If the skin is broken in the smallest degree, the part should be washed thoroughly with chlorine water, and afterwards with dilute aqua ammonia, and then thoroughly cauterized with potassa fusa, *not* with nitrate of silver; and then the limb should be firmly bandaged for a considerable distance above the wound, to retard absorption and circulation in the lymphatics. Take internally chlorine or bromine.

We have also received from the same author his treatise on "*The Causes and Cure of Diseases of the Feet*," a work of interest and instruction to the general as well as the professional reader.

We give our readers the following receipts from the "*Scientific American*:"

To Gild Steel.—Make a neutral solution of gold in nitromuriatic acid (aqua reg.) and pour into it a quantity of sulphuric ether; the ether will take up the gold and float upon the denser acid. The article is then to be washed with this auriferous ether, (with a hair pencil) the ether flies off and the gold adheres.

To Silver Brass.—Take one part chloride of silver, (the white precipitate which falls when a solution of common salt is poured into a solution of nitrate of silver or lunar caustic,) three parts of pearlash, one of whiting, and one and a half of common salt, or one part chloride of silver, and ten parts cream of tartar, and rub the brass with a moistened piece of cork dipped in the powder.

The editor of the *American Druggists' Circular* asserts that "good chloroform must give no coloration when shaken with strong sulphuric acid, nor a green color when a few drops of solution of bichromate of potassa are added to the sulphuric acid. Nor must caustic potassa produce a brown color, and calcined blue vitriol must not change to blue or green. If it smells of chlorine or sulphurous acid it is unfit for use."

TO OUR READERS.

It may be said with truth, that the pinnacle of editors' and publishers' ambition is to please and satisfy their readers; whether this proceeds from mercenary motives, or from the more laudable desire to please, entertain and instruct, or from the two objects alloyed—it, nevertheless, is an end to be longed for, the attainment of which is necessary to insure success. If their works or publications have given satisfaction, the increased demand for them, with the laudations of recipients, will be sufficient indication that the path they tread is the right one. On the contrary, if the number of subscribers diminish, and the interest in them flags, it is equally certain, that they have mistaken a by-path for the true one, compelling them to retrace their steps and commence anew—or wander off and be precipitated into the gulf of disappointment. It would be a mixture of presumption and self-conceit, to credit ourselves with even the idea that we have attained the desired end, and that our work is one of extraordinary merit. The encouraging letters and encomiums which have reached us, cause us to think at least that we are on the “right road.” We started the “Quarterly” with no pompous bugle notes to sound its advent and to give notice of the wonders we were to accomplish. We made no vain promises; and therefore had we been unsuccessful in our undertaking, we would have injured no one. We desire to make the “Quarterly” as far as our judgment will allow, the work and production of the whole profession. We would even wish to make it *A Dentist's Album*, and have each number adorned with lines of instruction and suggestions, above the names of one or more of the members of our profession. Our columns will be open for all sensible ideas, on which printers' ink will not be wasted.

“Altho' what each can do is small,
Much may be done by aid of all,”

Our next issue will commence Volume II. We have sent numbers of the first volume to many who are not subscribers. The price of subscription being low, we hope that those who are pleased with our efforts and wish us success, will immediately send their names. To ensure copies, this should be done *at once*.

MYONOTICA.

The Myonotics are medicines which act on the muscles and are divided into, I.—ASTRINGENTIA; and, II.—RELAXANTIA. Each of these contain two *Orders*—GENERALIA and SPECIFICA.

The Astringents when brought in contact with the fibres of muscles cause them to contract.

ASTRINGENTIA GENERALIA.

<i>Acetate of Lead.</i>	<i>Frasera Vesca</i> , (Strawberry.)
<i>Acetum</i> , (Vinegar.)	<i>Galla</i> , (Galls.)
<i>Acidum Gallicum</i> , (Gallic acid.)	<i>Geranium Maculatum</i> .
<i>Acidum Pyrolygnium</i> .	<i>Geum</i> , (Water Avons.)
<i>Acidum Sulphuricum Aromaticum</i> .	<i>Hæmatoxylon</i> , (Logwood.)
<i>Acidum Sulphuricum</i> , (Sulphuric acid.)	<i>Heuchera</i> , (Alum root.)
<i>Acidum Tannicum</i> , (Tannic acid.)	<i>Kino</i> .
<i>Agaric</i> , (Spunk.)	<i>Krameria</i> , (Rhatany.)
<i>Alumen</i> , (Alum.)	<i>Paulenia</i> .
<i>Amaranthus</i> , (Amaranth.)	<i>Potentilla Tormentilla</i> .
<i>Catechu</i> .	<i>Pinica Granata</i> , (Pomegranite.)
<i>Ceanothus Americanus</i> , (Red root.)	<i>Quercus Tinctoria</i> , (White Oak bark.)
<i>Cinnamon</i> .	<i>Quercine</i> .
<i>Comptonia Asplenifolia</i> . (Sweet Fern.)	<i>Quercitric Acid</i> .
<i>Colinsonia Canadensis</i> , (Hardhack.)	<i>Rhus. Glabrum</i> , (Sumach bark.)
<i>Creasotum</i> , (Creasote.)	<i>Rubus Triviolia</i> , (Dewberry root.)
<i>Diospyrus</i> , (Persimmon.)	<i>Rubus Villosa</i> , (Blackberry root.)
<i>Erigeron Canad.</i> (Canada fleabane.)	<i>Sanguis Draconis</i> , (Dragon's blood.)
<i>Erigeron Philad.</i> , (Philadelphia fleabane.)	<i>Spirea</i> , (Hardhack.)
	<i>Statice</i> , (Marsh rosemary.)

RELAXANTIA.

The Relaxants, when brought in contact with the muscular fibres causes those fibres to relax. Although their action has been but little studied, enough is known to warrant the opinion that the relaxants are very valuable medicines.

<i>Belladonna</i> .	<i>Lobelia</i> .
<i>Chloroform</i> .	<i>Ipecacuanha</i> .
<i>Gelsemium</i> .	

NEW YORK DENTAL PROTECTION UNION.

The following extracts, descriptive of the objects and organization of this society, are presented, from a conviction that they will prove interesting to many readers, and also as part of the present history of the profession :—

“NEW YORK, April 14th, 1862.

“At a meeting of dentists, assembled pursuant to call, at No. 781 Broadway, Dr. Wm. H. Dwinelle was unanimously elected Chairman, and Dr. W. B. Roberts, Secretary. Dr. Miles informed the meeting that the ‘New York Tooth Manufacturing Co.,’ which he represented, had been sued by the American Hard-Rubber Co. for infringement upon their patent, granted for the manufacture and vulcanization of hard rubber. He also stated that he had employed competent counsel, with the intention of testing the validity of the patent, and had filed his answer in conformity with the law.

“Dr. Miles then read the following paper :

“‘*The N. Y. Teeth Manufac’g Co. vs. Henry B. Goodyear.*
“‘*To Dentists.*

“‘Henry B. Goodyear is flooding the country with circulars threatening to prosecute all dentists who vulcanize hard-rubber plates for teeth, unless they pay tribute to him, [in the shape of a license.] The N. Y. Teeth Co. has been sued for an infraction of the alleged right of this Mr. Goodyear, and it is prepared to defend the suit to the last extremity—not ‘to die in the last ditch,’ but to fight in the first one. The Company feels bound to state a few facts for the benefit of the profession, leaving each dentist to act intelligibly thereafter.

“‘*First.* The answer of the Company in the suit referred to contains the averment that none of the actions ever brought by Mr. Goodyear have been defended in good faith, but have all been settled, compromised or admitted by default, and the validity of the Goodyear’s hard rubber patent has never been passed upon by a court or jury, or otherwise sustained or tested by any one who honestly defended such suits.

“‘*Second.* Although the patent is eleven years old, Mr. Goodyear has never *dared* to have it properly tested. The last equity term of the Circuit Court of the United States for this circuit had thirteen of these suits, which Mr. Goodyear did not bring to trial, although the defendants were ready in every case. *They have all been left off the calendar for the present term. Verb. sap. sat!*

“ ‘*Third.* Mr. Goodyear was restrained by an injunction order of the Supreme Court of this State, March 9th, 1860, from instituting or prosecuting further any suit upon his patent for the manufacture or sale of hard India-rubber.

“ ‘Of course each man must act for himself, but the Company has a score more of good reasons why it will not pay unjust tribute, and can satisfy every dentist that it continues to sell another and a better article than Goodyear makes.’

“ Dr. Dwinelle made a few remarks at the conclusion of the reading, suggesting that it would be well for the gentlemen present to express their views in reference to the matter treated of in the paper just read by Dr. Miles. Dr. Skinner then read a letter which he had received from the attorney of the ‘American Hard-Rubber Co.,’ threatening with a suit at law all who should infringe upon their patent. He stated that he had offered the Company \$75, to be deposited, and to become their property if their patent should be sustained, if not, to revert to himself; this offer was however declined.

“ Dr. Dwinelle said that it was the intention of the ‘American Hard-Rubber Co.’ to press this matter in such a manner as to get as much money out of the profession as possible, and it was now the proper time to put an end to the system of espionage and threats adopted by this Company. Further discussion ensued, carried on by Drs. Dwinelle, Roberts, Preterre, Skinner and others, when Dr. Skinner offered a resolution that a committee on organization be appointed by the meeting. Drs. Dwinelle, Roberts, and Miles were appointed such a committee, when the meeting adjourned to re-assemble at the same time and place on the 21st inst.”

At a subsequent meeting a Constitution, with a preamble and resolutions setting forth the objects of the society, was adopted, and the following gentlemen were elected officers for the ensuing year :—

“ *President*, Wm. H. Dwinelle; *1st Vice-President*, Walter B. Roberts; *2d Vice-President*, S. A. Main; *Secretary*, Frank H. Norton; *Treasurer*, A. McIlroy.”

The accompanying circular, stating the objects of the association, is addressed to the profession generally :—

“ *To DENTISTS.*—The members of the Dental Profession in the City of New York and its vicinity, having formed themselves into an Association for the protection of the interests of the profession throughout the country, take this method of circulating the objects of the Association, with a desire to induce universal co-operation with them on the part of the profession.

“ In view of the fact that parties pretending to hold legal patent rights over the manufacture and sale of certain articles

necessary to our profession ; and that these patents are with good evidence and good reason presumed to be invalid ; and that the parties holding them have used and are using underhand and improper means to promote their interests in the premises, to the sacrifice of those of the profession as a body, it becomes us to take such steps as shall put an end to all such conduct, and shall conduce toward the protection of the right at all hazards and at all expense.

"By means of this Association we propose to arrive at the end desired ; we propose to have every patent which shall be of interest to the Dental Profession carefully examined by competent judges, and if necessary, the question of its validity decided by test suits, to be conducted by this Association, and by means of funds obtained from the profession throughout the country, all of whom are certain to be deeply interested in such issues.

"We propose through our Secretary to answer all questions appertaining to the objects of this Association, and to make the profession acquainted with everything valuable or useful to them, which may from time to time come to our knowledge.

"In view of these facts we suggest the propriety of your forwarding your name to the Secretary of this Association, to be attached to our Constitution, when you will at once, upon election, become entitled to all the privileges of membership, including the right to protection when your interests shall be illegally attacked.

"By order,

WM. H. DWINELLE, *President.*

"FRANK H. NORTON, *Secretary.*

"*Astor Library, New York.*

"June 5th, 1862.

"The Association met, pursuant to adjournment, and was called to order by the President. The Printing Committee reported progress, and asked for time ; report accepted, and time granted. On motion, the President appointed Messrs. Kingsley, Clerk, and Lovejoy, as a Committee on Patents ; the balance to be added at a future meeting. On motion, adjourned.

"This Committee, consisting of Dr. Kingsley, (chairman,) and Drs. Lovejoy, Clark, White, Bronson, and Smilie, with the Council of Management of the Association, (*ex officio* members,) held a meeting at 781 Broadway, June 19th, 1862. The Chairman, Dr. Kingsley, took the chair, and announced that a quorum was present, and the Committee ready to proceed to business. Some remarks were made by the chair in reference to the importance of this Committee and its duties, followed by Dr. Dwinelle. On motion, the Committee decided by a unanimous

vote to proceed to the investigation of the validity of the patent of the American Hard-Rubber Co. On motion, it was decided to request the presence of Messrs. W. J. A. Fuller and Emory Ryder, before this Committee at a future meeting, for the purpose of obtaining testimony from them in reference to this subject. Adjourned to meet subject to the call of the chair.

"A meeting of the Committee, pursuant to call, took place at the residence of Dr. Wm. H. Dwinelle, No. 119 Tenth St., on Wednesday evening, July 16th, 1862. There were present Dr. Kingsley, (chairman,) and Messrs. Dwinelle, White, Roberts, Miles and Norton; also by invitation, and in accordance with the action taken at the last meeting, Messrs. W. J. A. Fuller and Emory Ryder.

"The meeting came to order, and by request, Messrs. Fuller and Ryder gave the gentlemen present such information as they possessed which would enlighten them in their investigations into the validity of the patent of the American Hard-Rubber Co., and the proper method to pursue in order to settle conclusively all doubts in the minds of the profession of the right of the rubber monopoly to exact tribute from them.

"The Committee were informed by Mr. Fuller, that in the ensuing week there would be tried in the town of Windsor, Vt., no less than thirteen suits for infringement of the Rubber Patents; and that the decision rendered in those suits would settle the question of the validity of the patent now held by the American Hard-Rubber Co.

"Furthermore, the Committee were assured that the counsel for the defense in these cases were possessed of evidence proving, beyond cavil, that the article known as 'Hard Rubber,' had been compounded of the same materials, used in the same quantities, and vulcanized by the same process, years before the Nelson Goodyear Patent, under which the American Hard-Rubber Co. manufactures, had ever come into existence.

"And again, the said counsel had in their possession, and would produce in evidence at the proper time, a piece of hard-rubber manufactured by one Hancock in England, at the time above mentioned, and whose history from that time to the present could be accurately traced.

"Not only had this patent been granted and published, but articles manufactured in accordance with it were then in use.

"It was stated by Mr. Fuller that no chemist had ever yet been able, after the most careful analysis, to detect the ingredients, much less the proportions or process used in the manufacture of hard-rubber. And until that could be done, no man could be defeated in a suit for infringement, by the production of a piece of his manufacture in evidence; unless he had been

followed throughout the entire operation by an eye-witness, he could not be molested. It was also in evidence before the Committee that the American Hard-Rubber Co. are not in equity the owners of the patent, they holding possession of it only by sufferance of the real owner, measures being now in progress to take it from them.

"The Committee were advised that the best course to be pursued by them in the premises, would be to draft a circular informing the profession of the fact that the American Hard-Rubber Co.'s. Patent was undoubtedly invalid, or that, if valid, it does not in equity belong to them, nor could any one be successfully prosecuted for infringement upon it, since it was impossible to identify the article manufactured. By these means the profession might be saved much expense, even previous to the expected decisions in the cases already alluded to. The meeting then adjourned.

"CIRCULAR TO THE DENTAL PROFESSION.—The New York Dental Protective Union announces, as the first result of its efforts to protect the interests of dentists throughout the country, the following conclusions based on the investigations of their 'Committee on the Examination of Patents.'

"The patent under which the American Hard-Rubber Co. are now manufacturing, and through which they have obtained from our profession some \$50,000, has received their special attention. Eminent patent lawyers and experts have given before the Committee the results of their examinations into the validity of the patent, and the claim of the American Hard-Rubber Co. to its ownership, and the testimony is conclusive: 1st. That the patent in equity, does not belong to the Hard-Rubber Co., and measures are now in progress to take it from them; and 2d. That the patent itself is invalid. The validity of the patent has never in a single instance been passed upon by the courts, but there are thirteen cases to be tried at Windsor, Vt., the coming week, and a decision may be expected in early autumn. The evidence above referred to is so conclusive that, pending the decision of the courts, we cannot but advise the profession, in protection of their own interests, to refrain from any further purchase of licenses of, or payment of tribute to the American Hard-Rubber Co."—*N. Y. Dental Journal*.

RESIGNATIONS.—Drs. J. L. Suesserott and J. H. McQuillen have resigned their Professorships in the Pennsylvania College of Dental Surgery.

HINTS ON VULCANITE WORK.

BY DR. GEORGE B. SNOW, HORNELLSVILLE, N. Y.

The following method of substituting new rubber for the old plate, (in case of a miss-fit,) without disturbing the arrangement of the teeth, will be found useful :

" Make a moderately thick plaster model in the old plate. Trim it, without removing the plate from it, and varnish its edges. Then oil the fronts of the teeth, plate, and model, and cover them with plaster, making a parting between the central incisors. We now have an accurate mould of the labial and buccal surfaces of the teeth and plate. The plaster should extend to the model, which should be notched in such a manner that these 'moulds' can be accurately readjusted at any time.

" After these moulds are removed, heat the model and plate sufficiently to soften the rubber, when the teeth can be removed from the plate, and the plate from the model, with ease. Now clear the rubber from between the joints of the teeth. Put a wax plate on the model, adjust the moulds, and put the teeth in their places. After waxing them securely to the plate, remove it to a new model, taken from an accurate impression. The joints can now be closed up, the wax trimmed to shape, and the case treated in the usual manner.

" This plan will be found preferable, in many cases, to the common one of fastening the rubber plate on a correct model, and investing in the flask at once. The joints can be got together in better shape, and unsightly appearance of rubber in them avoided in a great measure.

" Where the pins are properly bent, or where headed pins are used, it is not always easy to remove the old rubber from the flask. This is especially so in case of deep lower sets. By the method above described, these troubles are avoided, and the little extra time required will be well spent.

" There are some remarks in the *Register* for last April, concerning the articulation of rubber plates, in which a difficulty is mentioned arising from the parts of the flask not being brought together. The difficulty may be avoided, with the common way of getting up moulds, by adopting the following precautions :—

" Ascertain the exact quantity of rubber necessary for the case, (see *Register* for April last, p. 184,) using but little surplus. Cut a large groove entirely around the model, if possible, with leaders from the mould at short intervals. Use some kind of screw purchase to bring the flask together. The Whitney flask is the best in use, so far as this point is concerned.

“The rubber should not be packed against the gums of the teeth, where these are ground thin and set close to the model. Pack closely and abundantly around the rivets, and put the rest of the rubber on the palate and in the rim over the gums, and it will find its way behind the gums without fail. Where the alveolar border projects very much, the parting should be opposite the most prominent part of the ridge.

“In heating the flasks preparatory to packing, a small sheet-iron stove, standing on the work-bench, and heated with gas or alcohol, will be found convenient. It should have a door near the top, to give access to a movable sheet-iron muffle, in which the flask can be placed. The muffle should have room at the sides for the hot air to pass around it. The top of the stove should also be movable, so that by removing it and the muffle, a tin dish of suitable form can be inserted, in which water can be heated. This saves all bother of running to cook-stoves, which will not always be found in operation when wanted.”—*The Dental Register of the West*—October.

EFFECTS OF RED VULCANITE.

The inquiry respecting the noxious effects of this substance upon the economy has elicited the following replies through the *Lancet*. Thus DR. C. ROODS says, “I think the question of the influence of the coloring matter (bisulphuret of mercury) of vulcanite upon health has previously been referred to in the *Lancet*; and in consequence thereof I, the latter end of last year, spoke to the dentist who was preparing some artificial teeth for a relative of mine on the subject, who stated that he had never met with a case in which any ill effects had followed the use of the material. My relative has worn the teeth constantly since about Christmas. Early in the spring she complained of diarrhœa, or rather of an irritable state of the bowels; soon after taking food the bowels began to rumble, and free action followed, as if from strong physic, to use her own words. Catechu, with compound chalk and opium—her usual remedy in case of occasional diarrhœa—did not effectually restrain this unusual irritability. It checked it, and from time to time she has been for a short period better, and has hoped it was passing off; still it persists, and, although very careful in diet, the least thing disturbs her, and I believe she has not passed a week for six months past without being obliged to take astringents; and I cannot help thinking the vulcanite is the disturbing agent. I have thought of suggesting the suspension of the use of the teeth, and shall now do so. The party heretofore has enjoyed good health, and I am not aware of any other cause of the ailment. I may add that

mercurials, previously taken remedially, even in small doses, greatly irritated the bowels of this lady.

"Although it appears improbable that a mercurial preparation combined with an impermeable substance like vulcanite should escape therefrom in sufficient quantity to affect the system, still facts may prove stronger than probabilities in the matter; and although many persons wear the material without prejudice and with great satisfaction, occasionally a party peculiarly susceptible to the influence of mercury may possibly suffer from the coloring matter; and, if so, it would be desirable to select some other than a mercurial pigment for tinting the vulcanite, or coralline, as it is termed."

On the other hand, THOS. H. HARDING observes, "As to the occurrence of disordered health and some gastric irritation from wearing the 'red vulcanite' now so much used, I beg to state that, after a very extensive use of this substance, I have not known any instance of untoward symptoms that have resulted from wearing it in the mouth. Indeed, I can fully indorse an opinion which I gave in the *Lancet*, in a former letter, (May 4th, 1861, p. 452,) now nearly eighteen months ago, that I had then treated nearly 200 cases with this basis for artificial teeth, and had not known a *single* instance wherein the slightest ill effect was produced by its use. With increased experience I again reiterate my testimony in its favor, and the symptoms described by your correspondent must have arisen from some other cause altogether, possibly from an unhealthy state of the mouth, or from some mercurial amalgam in diseased teeth. The general experience of dentists now very satisfactorily proves that the vulcanite so largely employed is a harmless product, and may be worn for years without any inconvenience. Indeed, I have just received a letter from a lady at Eastbourne, who writes that she experiences the greatest comfort and ease from wearing a set of teeth mounted in a vulcanite base, and previously she had been a great sufferer, and her health generally was disordered, from not having the previous set of teeth properly adjusted in her mouth.

"Vermillion is sometimes adulterated with red lead and pentasulphide of arsenic; but I doubt even then whether it would produce the effects which 'Enquirer' attributes to it. I am in the habit of giving to its surface a very fine polish, which cannot in any way be affected by the fluids of the mouth. Although this substance is so highly appreciated, I never recommend it in preference to gold, unless on the score of lightness.

"I think that on careful investigation 'Enquirer' will find the cause of the impaired health to be due to some other influence than that of the vulcanite."

GOLDBEATING.

The art of reducing gold to fine leaves has been practised from a very remote antiquity. The Romans were in the habit of using it in ornamenting their houses, and Pliny says that it was hammered out so as to cover a space 600 times greater than the original surface cast. Modern workmen have carried the lamination of gold more than one thousand times farther than this.

It is generally supposed that it is essential that the gold employed in this art should be absolutely pure. This, however, is a mistake. In fact, there is very little goldleaf to be found which possesses this perfect purity, and many workmen believe that the malleability of the metal is increased by the admixture of alloy. The introduction of a little copper or silver certainly increases the tenacity of the leaf, and prevents the fine laminæ from adhering to one another, a property possessed by the pure metal in a remarkable degree, and one which is very troublesome to the goldbeater. There are two varieties of gold leaf, the pale and the deep colored. The former is alloyed with silver alone, the latter with silver and copper. Tints between these can be obtained by careful management of the alloy.

The gold is melted with nitre, or borax, or both, in a crucible, and cast into ingots, the size of which varies according to the mode of working adopted by different manufacturers. They are flat and oblong, so as to be of convenient form for lamination. The French goldbeaters forge this ingot, annealing it from time to time, as they find it becoming hard and disposed to crack. The ingots, or portions of them, of suitable size, are now passed through a laminating machine, consisting of two very fine, hard, polished steel rollers, with the necessary apparatus for adjusting the distance between them. The width of the metallic strip remains unaltered, and the flattening is carried on entirely at the expense of its longitudinal diameter, so that it is at last reduced to a long ribbon not more than $\frac{1}{160}$ of an inch in thickness. This ribbon is now annealed in the fire, and then cut up in pieces of about an inch square, which are introduced into a packet made of leaves of fine vellum, or of prepared animalized paper, so that the metal and the vellum alternate. This packet is enveloped in a strong parchment case, and is then ready for the operation of beating.

The beating is performed with a hammer, of about sixteen pounds' weight, on a solid smooth block of marble, strongly framed, and surrounded by a raised wooden ledge, and having a leathern apron in front to catch any scattered fragments of the precious metal. The hammer is short-handled, and is worked

with one hand. The elasticity of the packet causes the hammer to rebound, and saves labor, by obviating the necessity of lifting so great a weight. Every now and then, in the interval between two blows, the packet is turned, so as to be equally beaten on both sides. The blow is struck directly in the middle of the packet, and the hammer is slightly convex, that it may compress the gold most in the centre and dispose it equally on either side. The workman withdraws the packet from time to time to cool it, as the heat developed by these continual heavy blows would injure the skin; and he works it backward and forward to overcome any adhesions between the gold and the vellum. At intervals the packet is opened, to see that everything is going on satisfactorily, and the leaves are occasionally shifted, that all may be uniformly compressed. The beating is continued till the leaves have reached the edge of the packet, or till the one inch squares cover each a space of four inches square.

The result of this first beating is gold foil, which is cut evenly and put into books, weighed and numbered. The numbers run from 4 to 36, and indicate the number of grains which each leaf weighs.

Should the beating go on to the manufacture of leaf, these products of the first beating are taken out, laid on a leathern cushion, and cut each into four parts with a knife. Each of these parts is introduced into another packet of goldbeater's-skin or prepared ox-gut, and beaten in the same manner as before with a hammer weighing from ten to twelve pounds, till they expand to the size of the packet.

After this second beating, the leaves are again removed and quartered by a piece of sharp-edged cane, as they have a tendency to adhere to a steel knife. They are replaced in a packet as before, and again beaten out nearly to its diameter. The gold has now reached such an attenuation that 100 square feet of it will only weigh an ounce. It can be beaten out thinner even than this, and an ounce made to cover 160 square feet, but the process is tedious and wasteful from the number of broken leaves, and attended by no corresponding advantage.

The thin leaves are now taken out of the packets with wooden pliers, and by means of the breath, blown flat on a cushion, an operation requiring the dexterity of long practice. The broken leaves are rejected, and the rest are cut to a uniform size with a sharp cane, which reduces them to 3 or $3\frac{1}{2}$ inches square. They are then transferred to little books, the leaves of which have been covered with red chalk, to prevent the metal from adhering. Each book usually contains 25 leaves of gold. The average thickness of ordinary goldleaf is $\frac{1}{282000}$ of an inch.—*Piggot*.

ALLOYS OF SILVER.

Antimony, arsenic, bismuth, zinc, and tin, form brittle alloys with silver. The latter metal, in very small quantity, destroys the ductility of silver. An easy method of separating these two metals is to laminate the alloy in thin plates and distil it with corrosive sublimate. The volatile bichloride of tin passes over and condenses in the receiver. They may also be separated in the humid way.

Manganese and silver form an alloy. Silver and lead unite in all proportions, and are easily separated by cupellation. Iron and silver fuse together and form an alloy which cannot be resolved by cupellation, but which is easily decomposed by solution in nitric acid and precipitation with hydrochloric acid, or a soluble chloride. The silver may also be separated from this combination by fusion with borax or saltpetre. Steel combines with silver forming a very hard alloy, silver-steel, which, after heating, contains 1 part of silver in 500. Silver alloys with the precious metals, the malleability of which it diminishes, except in the case of gold and iridium.

Most of the silver of commerce is alloyed with a very minute portion of gold, and Pettenkofer asserts that all the commercial metal which has not been submitted to chemical purification, contains platinum also.

An alloy of silver with one-tenth or one-twelfth of copper, is the standard of coin in most countries. It is harder and more durable than silver alone. When boiled with a solution of cream of tartar and common salt, or when scrubbed with water of ammonia, the superficial particles of copper are removed, and a surface of pure silver is left. A combination of 95 parts of silver to 5 of copper constitutes the metal for medals and for the finest silver plate. Silver solder is composed of different proportions of materials, according as it is designed for the finest or for common work. That used with 95 per cent. silver is composed of silver, 66.6; copper, 23.4; zinc, 10. The common silver solder is made of silver, 66.6; copper, 30; brass, 3.4. The last ingredient renders it an uncertain compound; for, independently of the fact that this is an alloy of no definite proportions, brass always loses zinc, and becomes richer in copper after every fusion.—*Piggot*.

NEW METHOD OF AMALGAMATING ZINC.—M. C. Delamarre, in a communication to the "*Cosmos*," states that he has found very satisfactory results in his galvanic batteries, by dissolving from 12 to 25 grammes of bisulphate of mercury in the acid of each cell of a large-sized Bunsen battery. He states that with this precaution the zincs are always well amalgamated, dissolve very slowly, and never show the least sign of effervescence.

MECHANICAL DENTISTRY.

—o—

We have secured the services of a first-class Mechanical Dentist, and are now able to put up in the best possible style every kind of Artificial work: including

SINGLE GUM or PLAIN TOOTH WORK,
COTINUOUS GUM WORK and BLOCK WORK.

LIST OF PRICES.

FOR PLATE WORK—SINGLE TEETH.

Striking up Plate, - \$1 00 | Mounting, per tooth - \$0 30
Extra charge for Teeth and Plate.

FOR BLOCK WORK.

Carving and fitting blocks to plate, per tooth, - - - \$0 50
When soldered and finished, ready for the mouth, - - - 1 25

FOR CONTINUOUS GUM WORK.

Lining, soldering and baking set, \$10 00 | Repairing one tooth, \$3 00
Repairing each additional Tooth, - - - - - 1 00

JOHNSON & LUND,

No. 27 North Seventh Street, Philadelphia.

LIST OF PRICES.

TEETH.

READ THE TESTIMONIALS PRESENTED TO US BY MEMBERS OF THE PROFESSION.

Blocks or sections for rubber base, 18c	Single Gum Teeth, Plate Work, 18c
Single Gum Teeth, " " 18c	Plain " " 9c
Plain " " Rubber base. 9c	Pivot " " 8c

GOLD FOIL.

C. Abbey & Son's, per $\frac{1}{8}$ oz. \$4 00 | David Morgan's, $\frac{1}{8}$ oz. - \$2 50
S. S. White's, $\frac{1}{8}$ oz. \$3 50

TIN FOIL, &c.

Johnson & Lund's, chem'ly pure, 50c | Townsend's Amalgam, - \$1 50
Os. Artificial, $\frac{1}{4}$ oz. \$1 00

GOLD AND SILVER PLATE.

Gold Plate, 18 carats, per dwt., \$0 90	Gold Wire, 18 carats, per dwt., \$0 90
" solder " " 0 90	" solder 14 " " 0 75
Silver plate, wire and soldered, per dwt., \$0 08	

PLATINA.

Plate cut to pattern, per dwt., \$0 38 | Plate cut square, per dwt., \$0 35
Platina wire, per dwt., 40c.

Bismuth, Asbestos, Tin, Lead, Zinc, and other metals, at lowest market rates.

TESTIMONIALS.

ARTIFICIAL TEETH.

TESTIMONIALS

To the excellence of our manufactures, from Dentists of the purest character and greatest skill, have been received by us with a warm welcome. Mingled with a conscious pride that we have attempted to merit this grateful praise, is the determination that we will spare no labor, no effort, to win and maintain the very highest niche in manufactural excellence. The conviction is forced upon us by the concurrent testimony of best judges in the profession, that our artificial teeth are among the best now manufactured in the world.

JOHNSON & LUND.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's; having used nearly all others.

Waterloo, N. Y.

JOHN L. CLARK.

MESSRS. JOHNSON & LUND:

Gentlemen—Having used your Teeth in my practice for the past year, and finding them SUPERIOR to all others in BEAUTY, NATURAL APPEARANCE and DURABILITY, I hereby add my humble testimony in their favor.

Yours respectfully,

Flint, Michigan.

B. F. CLARK.

I have used Teeth of the different manufacturers of Philadelphia of ten years past, and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their resemblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blowpipe, show that the proportion of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN.

Philadelphia, Pa.

This is to certify, that we have used the teeth of Johnson & Lund, of Philadelphia, and think them superior to all others in use.

Elmira, N. Y.

CONKEY & FRENCH.

The Teeth of Messrs. Johnson & Lund's manufacture, I am using in my practice, and can find no fault with them.

Danville, Pa.

G. B. BROWN.

TESTIMONIALS.

This is to certify, that I have used the various and most of the different manufacturers' teeth for the last eight years, and now give to Johnson & Lund's the choice; deeming them as combining the most desirable qualities looked for in artificial teeth; such as naturalness of color, shape, symmetry and beauty of arrangement, comeliness of expression in the mouth, and strength and firmness for use.

Owego, N. Y.

R. WALKER.

We find Johnson & Lund's Teeth a superior article, and are better satisfied with them than those of any other make which we have used.

Hornellsville, N. Y.

JOHNSON & SNOW.

This is to certify, that I have bought of Dr. M. Frank, Johnson & Lund's Teeth, and consider them, without exception, the most beautiful I ever saw.

Lock Haven, Pa.

S. B. HYATT.

Having used Johnson & Lund's Teeth for the last year, I find them to be all they recommend them to be, for strength, durability and adaption to all the various uses met with in our practice.

Corning, N. Y.

N. B. LAUNY.

This is to certify that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and am happy to say that they are superior in every particular to any in use.

A. H. MATSON.

Homer, N. Y.

MESSRS. JOHNSON & LUND:

Gentlemen—I am in receipt of your second lot of teeth; they are life-like and beautiful, Your teeth STAND FIRE WELL.

Yours truly,

Scranton, Pa.

W. A. CHITTENDEN.

I have used the Teeth manufactured by Messrs. Johnson & Lund, of Philadelphia, and consider them equal in every respect to any I have ever used, and very cheerfully recommend them to the profession.

Avoca, N. Y.

F. H. GUIWITS.

Having used Johnson & Lund's Teeth to my perfect satisfaction, I would earnestly recommend them to Dentists in search of a superior article, and one that will always please.

S. F. TREMAIN,

Rome, N. Y.

(Of the Firm Tremain Bro's.)

I have used artificial teeth of the different manufacturers of this country, and do honestly believe Johnson & Lund's to be superior to all others in the various necessary and indispensable qualities desired by the dental profession.

Wellsville, N. Y.

H. M. SHEERAR.

Having used the Teeth made by Johnson & Lund, (M. Frank, Agent,) I take pleasure in recommending them as equal to any teeth I have used for the rubber work.

Utica, N. Y.

A. N. PRIEST.

DENTISTS!—If you want a strong and natural looking artificial tooth, use the teeth manufactured by Johnson & Lund, of 27 North Seventh Street, Philadelphia, Pa.

Yours professionally,

Milton, Pa,

L. D. EVELAND.

TESTIMONIALS.

MESSRS. JOHNSON & LUND:

Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers; they are very much admired, particularly by the ladies, for their beauty and natural appearance in the mouth.

Yours respectfully,

Danville, Pa.

E. C. KESTER.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession as a *decidedly superior article*.

Cortlandville, N. Y.

F. O. HYATT.

MESSRS. JOHNSON & LUND:

Gentlemen—You ask me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The *beautiful shape*—the *life-like* and *natural* shades, and their *strength* under the *blow-pipe* and *hammer*, render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth, deserves the thanks and substantial support of the dental profession. Wishing you success, I remain,

Yours truly,

Philadelphia, Pa.

M. LUKENS LONG.

MESSRS. JOHNSON & LUND:

Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*

Ithaca, N. Y.

A. H. FOWLER.

We have used in our practice for sometime past, teeth manufactured by Messrs. Johnson & Lund, and can speak highly of them in every respect.

Ithaca, N. Y.

BARTLETT & HOYSTRADT.

I have used teeth manufactured by Johnson & Lund, of Philadelphia, and like them much. Their color and shapes are admirable.

Lockport, N. Y.

W. BRISTOL.

Permit us to say that your Artificial Teeth are excellent; they must eventually find their way into every dentist's laboratory throughout the country.

Philadelphia, Pa.

C. BENESOLE & SON.

Having used *Artificial* Teeth of the various manufactures, and having had occasion to use those manufactured by Johnson & Lund, we can speak of them in the *highest terms* as to *strength*, *beauty* and *adaptability* to the various styles required in artificial dentures. Their appearance in the mouth is natural and life-like.

Medina, N. Y.

A. V. BELDING & SON.

I use Johnson & Lund's make of Artificial Teeth, and can recommend them as being perfect in every particular; they give *complete satisfaction* and leave nothing further to be desired.

Wilkesbarre, Pa.

J. M. BARRETT.

MESSRS. JOHNSON & LUND:

Gentlemen—I have used your Teeth for some time and consider them fully equal, if not superior, to any others manufactured.

Wilkesbarre, Pa.

Yours respectfully,

E. SHELP.

TESTIMONIALS.

Having inserted a number of Teeth manufactured by Johnson & Lund, it gives me great pleasure to recommend them to all dentists for their unsurpassed natural and life-like appearance, being satisfied that they stand the action of the fire and blowpipe as well, if not better, than any manufactured.

1700 Vine Street, Philadelphia.

AMBLER TEES.

I have used Johnson & Lund's Artificial Teeth, and believe that they combine all the qualities required by the dentist in a higher degree than those of any other manufacturer.

Delhi, N. Y.

P. B. MERVIN.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and think them exceedingly beautiful and life-like.

Milton, Pa.

HARRISON STICKER.

Having used a variety of Teeth prepared by different manufacturers, I cheerfully give my preference to Johnson & Lund's: believing them to combine more excellencies with fewer defects than those of any other manufacturer.

Cuba, N. Y.

W. H. WOOD.

I have been shown samples of Gum Teeth manufactured by Johnson & Lund, of Philadelphia, and think them exceedingly beautiful and life-like.

Buffalo, N. Y.

GEO. E. HAYS.

MESSRS. JOHNSON & LUND:

Sirs—I have used your Teeth of all kinds, and find them the best adapted for all uses of any I have yet tried.

Groton, Tompkins Co., N. Y.

W. C. ORCUTT.

We are in receipt of Johnson & Lund's Teeth, and in our judgment they have combined in their manufacture all that is necessary to represent natural teeth.

Auburn, N. Y.

GEO. W. TRIPP,
L. MATSON.

I have for some length of time used Artificial Teeth of Messrs. Johnson & Lund's manufacture, and do not hesitate in saying that I find them superior in every respect to any others in use.

Ithaca, N. Y.

B. F. GOODWIN.

The improved Teeth of Johnson & Lund, are, in my judgment, of beautiful form and life-like in appearance.

Oswego, N. Y.

D. S. GOLDEY.

If there is such a thing as perfection in the manufacture of artificial teeth, Johnson & Lund have certainly attained it.

Philadelphia, Pa.

E. J. LARASON.

I have used the Teeth manufactured by Messrs. Johnson & Lund, and consider them superior to any in use as to strength, appearance and durability.

Avoca, N. Y.

J. D. GRISWOLD.

Having used your Teeth in my practice for some time, I find that they possess all the qualities you claim for them. They are certainly very superior.

Philadelphia, Pa.

J. W. KNOX.

TESTIMONIALS.

This is to certify, that I have used the Teeth of Messrs. Johnson & Lund, of Philadelphia, and can cheerfully recommend them as decidedly superior.

Elmira, N. Y.

L. EATON.

I have used Johnson & Lund's artificial teeth for a sufficient time to test their utility, and consider them equal, if not superior, to any others now in use.

Port Deposit, Md.

WM. M. LOAG,

Having used Johnson and Lund's Teeth, I can cheerfully recommend them for their superiority in strength, appearance and durability, to any in use.

Williamsport, Pa.

A. S. RHOADS.

Having been in the profession of Dentistry for the last twenty-five years, and used all the different manufacturers' teeth, I would recommend Johnson & Lund's as equal to all others as to strength, appearance and adaptability to the case.

Penn Yan, N. Y.

JOSEPH ELMENDORF.

MESSRS. JOHNSON & LUND:

Dear Sirs—Having used Teeth of different manufacturers, I find that yours, for adaptation and beauty, stand Letter "A. No. 1."

Bath, N. Y.

J. R. SELOVER.

MESSRS. JOHNSON & LUND:

Gents—Yours of the 5th inst. came to hand all right, for which please accept my thanks; and not only would I wish to express my unqualified approbation and thanks for the very frank and prompt manner in which you have done business with me so far, but for the superiority of your teeth over other manufacturers' in strength, appearance and ability to stand fire. One block of those last sent, are to my notion, perfect in point of color and shape.

Grand Rapids, Michigan.

L. A. ROGERS.

The Teeth of Johnson & Lund's manufacture I have used, I can find no fault with.

Lewisburg, Pa.

H. GERHART.

Having used the Teeth of Johnson & Lund, of Philadelphia, I can truthfully say, that they are as good as any I have ever used, and can recommend them to the dental profession.

Geneseo, N. Y.

J. A. CHASE.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them fully equal, if not superior, to any now in use.

Phelps, N. Y.

JAMES R. SNOW.

MESSRS. JOHNSON & LUND:

Dear Sirs—Having used your Artificial Teeth for the past year in my practice, with many other kinds, I consider them as good and containing as many good qualities, as any others that have come under my notice.

Geneva, N. Y.

WM. F. EDINGTON, D. D. S.

I have used your Teeth, and I think they are of the best that are manufactured either in New York or Philadelphia.

Bloomsbury, Pa.

H. C. HOWER.

TESTIMONIALS.

Dr. M. FRANK:—Dear Sir—In reply to your inquiry, it gives me pleasure to say, that having used Teeth of many different manufacturers, I find those made by Johnson & Lund, in every respect equal, and in some respects superior to any others.

Watkins, N. Y.

L. K. GARFIELD.

MESSRS JOHNSON & LUND:—Dear Sirs—Having used your Teeth, and being pleased with them, I can recommend them to the profession as being superior to most of the teeth manufactured.

Little Falls, N. Y.

W. H. KLOCK.

This is to certify, that I have used Johnson & Lund's Teeth, and consider them superior as to natural appearance, beauty and strength to any in use.

Cooperstown, N. Y.

C. J. WADSWORTH.

Having used your Teeth to my entire satisfaction, I would cheerfully recommend them to the careful consideration of the profession.

Milton, Pa.

I. L. ANDREWS.

I have examined samples of Messrs. Johnson & Lund's Artificial Teeth, and think them equal to any I have seen, in form, strength and beauty of finish.

Buffalo, N. Y.

B. T. WHITNEY.

Having used your Rubber Teeth for some time, I am fully convinced that they possess all the qualities desired by the Dental profession.

Altoona, Pa.

WM. S. BITTNER.

Having for the last two years, used your Teeth almost exclusively, I can say with pleasure they are the best and most satisfactory under all circumstances; and therefore I recommend them to the public with great satisfaction.

Very respectfully,

F. A. WARE.

No. 646 North Tenth Street, Pa.

I have for some time used Teeth of your manufacture—also, those of other manufacture; yours, in particular, with entire satisfaction. I think I can with all propriety say, that they are a combination of strength, beauty and durability; also that they combine smoothness, uniformity and life-like appearance in their construction.

Trumansburg, N. Y.

S. W. DICKERSON.

This is to certify that I have used Johnson & Lund's block Teeth, and I consider them equal to any I have ever used, if not superior, and I have used four or five different manufacturers'.

Williamsport, Pa.

L. D. RANK.

DR. MONROE FRANK,

GENERAL TRAVELLING AGENT

FOR THE SALE OF

JOHNSON & LUND'S IMPROVED ARTIFICIAL TEETH,

RESIDENCE—CORTLAND, N. Y.

THE
DENTAL QUARTERLY:

DEVOTED TO THE INTERESTS

OF

DENTAL SCIENCE.

VOLUME II.—1863.

PHILADELPHIA:
JOHNSON & LUND, PUBLISHERS,
No. 27 NORTH SEVENTH STREET.

THE DENTAL QUARTERLY.

VOL. 2. PHILADELPHIA, MARCH, 1863. No. 1.

DENTAL EDUCATION.

(CONTINUED.)

While it is our duty to do all in our power to encourage Dental Colleges, we are to take care that we do not, by regarding them of necessary importance, cast reproach upon the fair fame of those who have not attended them. They are not absolutely necessary to finish the education; and there are those who are benefitted by such a course but little more than superficially. Interest, genius and perseverance are qualifications as much to be relied on as the mode of instruction; and to such as possess them, this means proves an easy and speedy way of accomplishing the end. Nevertheless, hard work, tact and observation, have enabled some to attain, what their more highly favored competitors have not,—high social positions and fortunes. There have been circumstances preventing many attending who now stand high in our ranks, and who have studied since our colleges have been established, and the several Faculties have acknowledged the attainments of a few by conferring upon them the Honorary Degree. The offices and laboratories of many dentists are colleges in themselves, the result of years of toil; and where these dentists possess ability to teach, can from them send forth into the world masters of this branch of medical science.

At present our colleges are few, and they in their infancy. At some future time, we trust not far distant, when they are numerous and accessible to all, they will, doubtless, be attended by every student. When that day comes, it will be just to make this a distinguishing mark of the good from the bad dentist. Then, want of energy and not inability will be the cause of non-attendance. It should be the aim of all to hasten the time.

The zeal of those who consider the Degree necessary to the dignity of the profession can be directed laudably to this end. An opportunity is here shown for those who have the interests of Dental Science very much at heart, to prove their sincerity. Their means and efforts can be directed towards establishing colleges in every city on as liberal a basis as possible. If not free at first, they might in course of time, under certain restrictions, become so. Then they would be monuments indeed of the magnanimity of the influential and wealthy advocates of Dental advancement and refinement.

They would thrive best under the auspices of societies, which should be organized for the purpose. Then every dentist could exert an influence and do his share towards the accomplishment of the object. The manner and means of carrying them on, to be a subject of consideration and discussion after such organization. They should be numerous enough to enable every dentist frequently to pay a visit to one. We cannot think that there are many who would not favor such an undertaking; which, once started, would not fail to keep in operation. In a few of our cities we have dental societies already established, and also dental colleges in active and successful operation. As far as necessity demands, these could be free to those who have plenty of brains, but, unfortunately, "slender purses." Our medical colleges we believe furnish free tickets to the sons of poor clergymen. Perhaps our dental colleges can outvie them.

In connection with each of these colleges should be established a common laboratory, where every dentist so disposed could resort, to work and to impart and receive instruction. The benefit resulting from these to each individual would be incalculable. Students and practicing dentists would thus be brought together, and the interest of one be the interest of the other.— In this to a degree, we have had experience. A few years since we manufactured at a certain private laboratory "Continuous Gum Work." It was the habit of a number of others of the profession to attend for the same purpose or to learn this style of mounting artificial teeth. We wish here to bear record of the fact, that we obtained, by verbal interchange of ideas, observing the different modes of accomplishing the same end, &c.,

knowledge which perhaps we could never have obtained in any other way. The intercourse, too, was always pleasant and friendly and many who are now hundreds and thousands of miles apart, will, we have no doubt, on reading this, recall with feelings of pleasure the happy hours spent in that laboratory. Independent of the amount of knowledge which in this way can be obtained and made available, there are other advantages to be taken into consideration. A relief could there be found from the close confinement and arduous duties of the office. A dentist, even in the social talk, would find reasons enough to appreciate the privilege of attendance. It would promote social feeling among those in the neighborhood of each other, and remove all disposition to selfish jealousy. Matters could there be discussed without the form and restraint of regular meetings, and probably be brought to more harmonious and satisfactory conclusions.

By reference to another column our readers will notice that a bill has been introduced in the Senate of Pennsylvania to incorporate another Dental College in Philadelphia, to be called the Philadelphia Dental College. Among the corporators we do not recognize any of the members of the dental profession. It is sad to think that outsiders take more interest in our destiny than we do ourselves. There are certainly enough dentists on the retired list, with interest enough in us, to engage in these undertakings. Why do we not find them among the corporators?

If this bill passes, and we have no reason to wish that it may not, we hope the expenses of attendance will be so regulated, that they will not be too great for the poorest student to incur. Until dental colleges become more numerous it will be necessary for many students to come from distant places. Unless they possess the means, they must rely upon the employment of their spare time in dental offices and laboratories or in other ways to pay for board and other expenses. If these are too great, it will be an utter impossibility for them to receive a collegiate education. If it is the wish therefore of the corporators to extend the advantages of their college to every student, we hope they will make the fees and expenses as light as possible. Dentistry is a

profession requiring education and refinement, and they need not fear by reducing the price of tuition, that their halls will be swarmed by adventurers from every trade and calling. Cheap medical and dental education will rid very quickly the respective professions of quacks and imposters.

Candidates should not be qualified for admission unless they have practiced in a private laboratory and office at least two and a half years. After attending one course, if on examination they are found competent to practice, the degree should be conferred upon them.

A. T.

AMALGAM FILLINGS.

BY DR. S. H. COSTEN.

The use of amalgam, when the filling of fangs is desirable, has generally and doubtless justly been condemned; as it may, by passing through the apex where the opening is large or otherwise, set up a mercurial action in the surrounding vital parts—particularly where there is much susceptibility to mercurial impressions. But I think it may be used with great advantage and perfect impunity where the tooth is much decayed, the crown weak, or the cavity difficult of access, by filling a portion of the fang with tin foil and then placing the amalgam upon it. As the tin and mercury have a great affinity for each other, the increased temperature of the mouth will cause them to unite and form a continuous solid body, thereby preventing any material galvanic action which might otherwise occur.

I would recommend the following mode of preparing the amalgam (Townsend's). Combine in the usual way; add a few grains of Chlorid-Sod: (common salt); triturate a short time, and wash in clean water until it is entirely free from saline taste.

This process divests it of oxidation and leaves it very bright and plastic.

EXOSTOSIS OF THE TEETH.

BY DR. J. T. ABBOTT, FABIUS, N. Y.

Exostosis of the teeth has received but little attention; probably from the fact that no permanent radical cure for the disease

has been discovered. Palliative remedies, however, have been and may be used with benefit for the time being; but the only permanent cure of the disease is the removal of the teeth thus affected. It is generally difficult to arrive at a positive diagnosis, as the teeth thus affected are seldom sore to the touch, and the appearance of the gums does not assist the dentist in arriving at conclusions. There are symptoms that point to exostosis, and yet are common to other diseases; but if we understand well the temperament, constitution and general habits of the patient, we are better prepared to discriminate.

I find in my memorandums many cases that have been treated for neuralgia, in which all neuralgic pains ceased, after the extraction of one or more teeth that were affected with exostosis. The following case was the most complicated of any that I have ever met with in my practice, although I have extracted single teeth that presented a much larger growth.

Mrs. T. aged 40, temperament nervo-sanguine, called upon me to have her teeth examined. I found her teeth all in place, neatly formed and arranged, one molar slightly decayed, which I filled. Two molars were much decayed, but the pulps were not exposed. She refused to have them filled or extracted. Upon further inquiry I found that she had experienced almost uninterrupted pain in the superior maxilla for nearly a year, and for some months previous to that time, it was occasional; but each time it recurred it was more severe and protracted. She described it as *tic-doloureux* or neuralgia. My opinion was that several of the teeth were affected with exostosis. I advised the extraction of the two diseased molars, and informed her that it might be necessary to extract several or all of the superior teeth. She left (as she afterwards expressed it) disgusted with my diagnosis and barbarous remedies.

She consulted her family physician (as she had done previously to calling on me) who taxed his skill using all the usual remedies in such cases but without avail; temporary relief was alone obtained.

She called on me again in a few weeks in company with her physician. He did not agree with me in my opinion, but advised the extraction of the diseased molars. I found upon extracting

them that the roots were very much enlarged. The doctor was compelled to admit the correctness of my diagnosis; but it required ocular demonstration to convince him. The patient returned in a few days and I extracted the molar I had previously filled; that, too, was enlarged. She returned at different times, submitting to the loss of one or two teeth at each sitting, until she had lost all her superior teeth. She had experienced but little pain in the lower jaw until this time, but this increased so rapidly that she was anxious to have all her teeth extracted, which was done in a few weeks. Every tooth was found to be enlarged with exostosis. The neuralgic pains have ceased entirely, her nervous irritability is much improved, and she is enjoying the benefits of the continuous gum teeth on platina plate.

I succeeded in extracting all the teeth entire, although some of the roots were so much enlarged, that pieces of the alveolar processes came with them and several pieces were taken out afterwards.

As this case appears to me to be a very rare one, I have been very minute in describing it. It was my intention to give several other cases, but this occupies more space than I had intended.

DESTROYING NERVES AND FILLING PULP CAVITIES.

BY DR. E. F. B., SAN FRANCISCO, CAL.

In the September number of the "QUARTERLY," I notice an article upon the subject of "Destroying nerves and filling cavities." As this is a subject which I consider of great importance, I have thought it of sufficient consequence to give you my experience in this branch of practical dentistry.

I commenced about eighteen months ago to keep a record of the condition and number of teeth treated in cases where the nerve was exposed, and the person had in consequence suffered with tooth-ache. I continued this record until the number had reached more than *three hundred cases*, when I became so fully satisfied with my success, and the propriety of continuing the

treatment, that I have since discontinued the record. I have generally stated to my patients that in the event of failure, the price charged would be remitted, if it became necessary to extract the tooth. My object was partly to induce the patient to return in case the treatment should prove unsuccessful. I have within the time specified extracted but three teeth that I attempted to save, one of these was extracted about one hour after the treatment was commenced. It continued to ache, and the patient had no confidence in my being able to relieve the pain; the two others were extracted after having been filled. It is possible that some, not probable that many, were extracted subsequently by other dentists. I make no pretensions to any new discovery, but simply make these statements to induce those dentists who think a tooth should of necessity be sacrificed because it aches, to desist from their unnecessary practice.

The method I have adopted is the following. I first remove from the cavity all the *caries* that can be conveniently removed without interfering with the nerve; then wipe the cavity and introduce upon a small piece of cotton a quantity about equal in size to two pin's heads of the preparation mentioned below. This I wipe from the point of a broach upon one side of the cotton and introduce into the cavity, so as to bring it in contact with the nerve. I then pack over it a small quantity of dry cotton, and cover the whole with wax or gutta percha.

I prepare the compound used as follows:

R Acid Arsenious, ʒij.
 Morphia-Sulph, ʒj.

Rub these ingredients in a wedgewood mortar with creasote, until the mass is thoroughly incorporated, forming a compound of about the consistency of cream.

I direct the patient to call in twenty-four hours, when I remove the whole and wipe the cavity. To neutralize as much as possible any further effect of the arsenic, I introduce cotton saturated with a solution of Hydrated Sesqui-oxide of Iron. This I direct the patient to remove in a day or two, and in three or five days, or when the soreness has disappeared, to return to have the tooth filled. I then clean the cavity as in other cases, placing in the lower part of it a preparation similar to "Hill's Stop-

ping," if a plastic filling is to be used, and with Os-Artificial if gold is to be used. *I take no especial pains to remove the dead nerve*, as experience has taught me that it will always take care of itself. I then immediately complete the operation of filling. I often use for these cavities amalgam composed of pure silver and tin, which I wash white with chloride of sodium and water. I believe dentists have placed too much importance upon removing dead nerves and filling fangs. There is I believe a principle in nature always exerted to expel from all parts of the organism useless and dead matter; and I believe these dead nerves are expelled or absorbed from the fangs of teeth, in accordance with this general law. In proof of this, I will cite one single case.

A patient came to my office about fourteen months ago with an aching tooth. She exhibited great reluctance to having it extracted. The tooth, a superior second molar, was much decayed. I, however, proposed to destroy the nerve, and fill the tooth, stating that at it might last a year or two, which she decided to have done. She intended to have a partial set of teeth inserted at some future time, and it could then be extracted if advisable. She returned about two months since to have the artificial teeth inserted. I found upon inquiry that this tooth had not given any trouble since it was filled. The filling was still firm in the tooth, but I thought it best to remove it with some roots of others. On examining this tooth by opening the fangs through the nerve cavities I found them to be free from any appearance of matter of any kind, although when filled, the nerves were not extracted from the fangs. If this theory is incorrect, I have only to say, "*Errare humanani est.*" Of one thing I am sure, that whether the nerve disappears from the fang or not, we need have no fear that it will do harm if its vitality is destroyed.

[The above we have received from a friend of the "QUARTERLY," in California. We would be pleased to receive the experience of others upon this subject, assuring them that their labor will not be in vain. A. T.]

ALVEOLAR ABSCESS.

BY DR. NEMEMIAH DODGE, NEW YORK CITY.

The interesting article from Dr. J. T. Abbott in the last number of the "QUARTERLY" reminds me of a stubborn case of Alveolar Abscess, which I treated successfully in 1856. Disagreeable matter was being discharged through the gum, causing the latter to exhibit a fungus growth. I treated the gum and teeth (front incisors), filling them with gold. During the fall of 1862 I saw them, and they presented a healthy appearance.

SWAGING AND FINISHING PLATES.

(CONTINUED.)

The mode of mounting artificial teeth, commonly known as "Continuous gums on platina," gave promise at one time of being adopted universally by dentists. For various reasons, some very apparent and others not, its wide spread popularity, has seemed in a measure to have declined.

The knowledge of this style of work does not date from the issuing of Dr. Allen's patent, since a few unsuccessful experiments had been tried by one or more of our old dentists many years prior to that time. These having failed to gain the desired end, such facts should in no wise be a matter of consideration to be urged against the patentee, who by toil and perseverance, met with much better success. In bringing it before the profession, he has not been encouraged by the majority of those who should have encouraged him, and which encouragement the beauty and purity of the work merit. This has been the result to a degree of the mistaken policy of dentists waging war against dental patents. We cannot think there is anything wrong in procuring a patent right, provided the improvement is original and new, and does not interfere with the rights of other citizens: nor do we think there are many dentists, who, if the opportunity should come, would not avail themselves of this

beneficent protection. The error on the part of dental patentees has been in the manner of charging for office rights. The desire for their own gain should be blended with the desire for advantage and gain also to the licensees. When we take into consideration the amount of plate-work of any particular kind put up by the majority of practitioners during a year, one can see at a glance the reason for their repugnance to embark in anything new, without knowing to a certainty whether it will give satisfaction or not. They are not willing to pay cash in advance, the loss of which they will feel, without knowing that at the end of a year or years, they will receive corresponding, or as they should, greater benefit. A different way of doing this business would secure better results, and be productive of better feeling on the part of the profession towards patentees, and patentees towards the profession.

Another evident cause of its want of great success, has been the miserably made "body" sent into the market; this was made to flow at too low a temperature, impairing both the teeth and strength of the work. Through the instrumentality of Dr. E. A. L. Roberts of New York, and Dr. Kearsing of Brooklyn, this has been remedied. Both these gentlemen have made a very superior "body," and dentists wishing to test the excellence of this work, would do well to procure that of their manufacture. Dr. Roberts' is made under the superintendence of Dr. Allen.

It has been advanced as another objection to this style of work, that it is too heavy to be worn with comfort. Every experienced dentist will acknowledge that when a perfect fit is obtained, that a slight amount of extra weight is of but little matter. We have known patients while having their platina sets mended, complain of the silver sets they were wearing temporarily being too light.

Continuous gums on platina exhibit natural appearance and life-like expression, in restoring the sunken portions of the face to any desired fulness. They can be made to imitate the light and shades of the natural gums. They are perfectly pure, and impervious to the fluid secretions of the mouth. When made in the right manner, their strength and natural feeling to the tongue with the above considerations, should recommend them to those

who desire furnishing their patients with pure and beautiful artificial dentures.

It is not our purpose to give a very minute detail of the manner of manipulating in this branch of dentistry, as Dr. Allen is preparing a practical work setting forth his system, which will enable those who desire it, to perfect themselves in every branch, and produce with natural skill, excellent work. We hope when this book appears, that the profession will show the high respect due the author by largely patronizing it. We deem it our duty to inscribe here our sincere wish for the speedy attainments of the end which it designs to accomplish.

The manner of taking the impression is the same as in other work,—the same care being observed as recommended in a former article. The plate is to be swaged with a rim. Upper dies should be made of tin, and the lower of zinc. After getting the articulation and making the models, we proceed to make the teeth; these are made especially for continuous gums, the long single pins being preferable. They should be ground with the same care as other teeth, making the fangs of each one to touch the plate. In this way the teeth will be prevented changing position when the body is fused, and the warping of the plate be guarded against. Unlike gum teeth they can be arranged in any manner to please the whims of the dentist or his patient. The ease of articulating will be appreciated in prominent upper and lower jaws, where it is necessary to incline the teeth inwardly or outwardly, and where, in many instances, in other modes of mounting we are compelled in order to make satisfactory fits, to use plain teeth.

After articulating on the models, the teeth are to be tried in the mouth, and the defects, if any, remedied. If the lips or cheeks are to be restored to their natural fulness, wax is to be placed on to represent the gums, and with a warm spatula carved until the desired effect is produced. An outline of the case is then to be drawn on a piece of paper, to be resorted to when the "body" is put on. If proper judgment is possessed by the dentist, and exactness not necessary, it is better not to use the wax, as the act of removing it, may disarrange the teeth. If, however, exactness is necessary, and the removal of the wax will

endanger the position of the teeth, the building on of the wax can be left until after the teeth are soldered. If used before imbedding in plaster, the wax should be carefully removed from the front and from between the fangs; this precaution, by allowing the investment a firm hold, will prevent the teeth moving when backed.

With a mixture of alcohol and gum-shellac, the consistency of jelly, the teeth are now to be covered, using a camel's hair brush for the purpose. This will prevent the teeth etching when soldered, the heat being so great as to cause the plaster, without this precaution, to injure the enamel of the teeth. Here, too, for some time was a serious objection to the work. It was at first only remedied by re-enameling. This in many cases caused trouble, and we have no doubt for this reason many discontinued its manufacture. After this coating is dry, the teeth are to be imbedded in plaster and asbestos, or plaster and gray soapstone, equal parts of each, thoroughly mixed. We use the latter mixture and consider it in every respect all that is requisite. When this hardens, the wax which held the teeth in position is to be carefully removed, warming it to avoid disturbing them. A band or continuous lining in them to be fitted against the teeth, and the single pins bent down over it. This is to be made to fit the plate perfectly, and also to touch the point where each pin is bent. This will be another guard against the teeth changing position when the "body" is fusing. It will also add to the strength of the work. Small pieces of pure gold, dipped in moist borax, are to be placed by each pin, and also where the band touches the plate.

When the teeth to be soldered are placed at the mouth of the muffle, the heat should be a bright red. When the moisture is evaporated, the piece is to be moved at intervals of ten minutes, about half an inch at a time, gradually into the muffle. When red hot, the tops of the furnace are to be placed on, and the heat raised to the melting point of gold. It should not be allowed to remain in the muffle too long. It requires, therefore, close watching, and the moment the gold melts, it is to be removed. Every point is to be soldered firmly; if not, more gold is to be put on and replaced in the muffle. When cooled, the coating is to be

removed, the teeth and plate washed thoroughly, and the first coat of "body" built on.

This part of the manipulation requires an extra apprenticeship; and although at first sight it may appear very easy to do, yet an attempt will soon undeceive. Indeed the proper building and baking of the "body" lay the foundation for success in beauty and strength. We do not wonder, therefore, at so many being dissatisfied at their first attempt and giving up in despair and disgust.

It is necessary to bake the "body" twice, on account of its shrinkage. The second coat is built on to the fulness required, carving in such a manner, that when the gum is fused, the lights and shades of the natural gums may be imitated. It will beautify and strengthen the upper set, by baking the "body" on the roof of the mouth and imitating the rugæ. The strength of this may be proved by breaking up a set; it will be found no easy task to remove the body.

Not more than two sets should be worked at a time, in the same muffle. If this is done the heat will be too great and quick on the third and fourth case. When the "body" is ready to bake, the set should be placed on a fire-clay slab, within an inch of the opening of the muffle. The latter should be red hot; the fire fixed and supplied with fresh coal. At the end of fifteen minutes it may be moved one-half an inch—and then, at the end of every ten minutes, one-half an inch until within the opening of the muffle. The door of the muffle is then to be closed. It should remain there until it is red hot, then shoved to the back part of the muffle, the tops of the furnace placed on and remain until fused. We use Schuylkill coal, and for this purpose deem it the best. We proceed in this way with both coats of "body."

We use a spatula for spreading the gum; it is well to have them of different shapes, as may be most convenient to the manipulator. We commence to put on the gum at the right angle of the jaw and working around, little at a time, until we reach the other angle, and so on until the whole is spread on. The thickness that it is to be put on depends much upon the gum; some is made pinker or redder than others, hence, if all were

spread on the same thickness when baked, they would not exhibit the same color; some would be deep and some light. If exactness is necessary, every new gum, before it is used, should be tested, in order to ascertain the correct thickness that it should be built on. The gum should be fused the same day that it is built on. The manner of introducing it in the muffle is somewhat different from that of the "body." Place the set within an inch of the opening of the muffle; the latter is to be red hot, the fire fixed and fresh coal supplied. At the end of fifteen minutes, advance one-half an inch—and then at the end of every ten minutes, one-half an inch until within the opening of the muffle. The door of the muffle is then to be closed. When the set is red hot, the tops of the furnace are to be put on. *When the muffle is at a white heat, and not till then, is the set to be shoved to the back part, and the gum fused.* When removed it is to be placed in a warm muffle to cool.

A. T.

TANNIN.

We do not think it will be foreign to the design of the "QUARTERLY" nor uninteresting to dentists, to consider in a familiar way the history of Tannic Acid and its various uses. As a remedial agent, in the raw state, as a tincture, as a gum-wash and in other forms, in many operations, daily we find frequent occasion for using it.

The name *tannin* was first given to a principle contained in many vegetables, having the properties of producing a white flocculent precipitate with a solution of gelatin, and a black precipitate with the salts of sesquioxide of iron. It was found to exhibit a difference of properties in different plants, one existing in oak bark, galls, &c.; and others in Peruvian bark, catechu, &c.; the characteristics which distinguish them is the production of precipitates of different colors with the salts of sesquioxide of iron. The tannin of galls is the tannic acid of commerce. The latter term was given to it lately, when admitted to rank with the acids; but the term *tannin* is very generally used.

It is without odor, strongly astringent to the taste, of a yel-

lowish color, and soluble in water, alcohol and ether. In solution when exposed to the air it becomes turbid. *Strecker* looks upon it as a compound of *gallic acid* and grape sugar, the latter of which is destroyed in the spontaneous change that moistened galls undergo by time. The most simple way of procuring it is by macerating in a bottle, powdered nut galls, with just enough ether to moisten the powder, for twenty-four hours, and then expressed in a powerful press. The process of maceration and expression is repeated until the powder is exhausted. The whole virtue will then be contained in the several liquors; these are mixed, the ether distilled off, and the residue dried by means of a vapor bath.

In medicine it is used for the same purposes as other vegetable astringents, with the advantage of smallness of dose, which renders it less apt to offend an irritable stomach. It is used in most forms of hemorrhage in the cure of piles, chilblains, &c., and is very beneficial in diarrhea and advanced stages of whooping cough.

White Oak bark, which contains a large proportion of tannin, after being ground, is used extensively by the manufacturers of eather from the raw hide; hence the name *tanner*.

We have found tannin very useful as an anæsthetic in lancing gums and extracting children's teeth. For this purpose we take a small phial of tincture of myrrh and add tannin until it assumes the consistency of cream, and this mixture apply to the gum. We keep it well stopped for use, and our high appreciation of its useful qualities, induce us always to keep a supply on hand.

To reduce the sensitiveness of the dentine after the nerve has been destroyed and extirpated, as much tannic acid should be used as will adhere to a piece of cotton about the size of two pin heads slightly moist with creasote. This should be renewed every other day or daily, if the dentine is very sensitive. When the cavity is prepared to receive the filling, a fresh pledget should be placed in the fang and the filling condensed over it.

An ounce of it added to a gallon of gum-wash as prepared ordinarily by dentists, will be found to increase the remedial properties of the wash.

A. T.

NOTICES OF BOOKS, &C.

We have received a copy of Dr. Cleaveland's "*Dentist's Memorandum*," a book of engagements and manual of ready reference. It may be used also as a journal of operations. It contains a large amount of useful information, recipes for solders, gum washes, tooth pastes, tooth powders, os-artificial, cements, &c., &c. It should be in the hands of every dentist. For sale by Johnson & Lund. We take the liberty of making the following extracts.

ANÆSTHESIA.

"Among the various anæsthetics in use, experience has proved that chloroform is the pleasantest, most convenient of administration, and as safe as any. No anæsthetic vapor should be inhaled except there is at hand a phial of Aqua-Ammonia and one of cologne water, and also a galvanic apparatus ready for instant use. Two persons are necessary to be present, both for the safety of the patient and the reputation of the dentist, one to administer the chloroform, and one to extract the teeth.

"Let the patient loosen the clothing so as to remove all pressure about the chest and abdomen, and then sit easily and naturally in the operating chair. Before the inhalation of the anæsthetic, the teeth should be carefully examined, and such instruments selected and placed handily as may be needed.

"The one who is to administer the vapor should stand at the left side and partly behind the patient, and folding up a napkin about five inches square, place it in the hollow of his left hand, make a depression in its centre, and into that depression pour about a teaspoonful of the chloroform. The napkin is then to be held under the chin, and the vapor, largely diluted with air, will be inhaled without inconvenience. After a few moments, the napkin may be brought up in front of the nose and mouth, the upper edge resting across the face under the eyes, and pressed upon the cheeks so as to prevent the vapor from reaching the eye-balls and causing them to smart, or producing inflammation in them.

"The lower edge of the napkin should be kept at a considerable distance from the mouth, so as to allow free access of air to the lungs, and the patient conversed with cheerfully to allay all fear or excitement.

"Total insensibility is not necessary; and the jaw being apt to be fixed under excessive anæsthesia so as greatly to

embarrass the operator, it is always to be carefully guarded against. As soon as the operator thinks enough vapor has been inhaled, while the patient retains consciousness and can move the jaw, he should prepare to proceed with the extraction. More chloroform should then be poured on the napkin, and it lowered so as to be out of the way of the operator, but still held under the chin, and as soon as the patient gives indications of pain, it should be carried in front and near the mouth and nose.

"By proceeding in this manner, from ten to thirty teeth and fangs can be extracted at one sitting, without pain or any severe shock to the system, and without danger.

"If, however, the patient does become too much affected with the anæsthetic, he or she must at once be removed from the operating chair and laid upon the sofa or carpet, with the face downward and the head as low or lower than the body. Cologne Water, or Aqua-Ammonia must be placed before the nose and mouth for inhalation, taking particular care that the vapor of Ammonia be not strong enough to injure the respiratory organs. If the inhalation of those vapors does not restore the patient, or if there is no active breathing, the galvanic current should be applied at once, placing the positive conductor on the nape of the neck and the negative pole on the front of the chest, moving it about from the region of the heart to those of the diaphragm and lungs, so as to rouse all the thoracic organs to activity. Friction on the surface and the extremities should be resorted to along with the application of galvanism, which may be needed for hours even, before the patient is so far recovered that it can be dispensed with safely.

"When vomiting occurs to one under the influence of an anæsthetic, care must be taken to place the patient so that what is thrown up into the throat shall fall out of the mouth, lest either solids or fluids may pass down by the benumbed glottis, into the lungs, and thus cause immediate strangulation or subsequent injury to the respiratory apparatus. A recumbent posture, on the face, with the head low and the chin outstretched, will favor the free ejection of anything vomited. As vomiting from the administration of an anæsthetic, even when the patient is not fully insensible, is always unpleasant and often dangerous, it is better never to administer one for four or five hours after a full meal."

A Dublin dentist has left a surgeon £50 to cut his head off before interment, so as to ease his mind about being buried alive.

(From the Philadelphia Public Ledger of January 15th:)

AN INTERESTING CASE.—A CHARGE OF MAL-PRACTICE.

Yesterday, in the District Court before Judge Hare, an interesting case, involving the question of the safety of Chloroform was tried. John P. Bogle brought an action against Dr. Henry G. Winslow to recover damages for injuries alleged to have been sustained through the mal-practice of the defendant. The case, as developed by the plaintiff, was substantially as follows.

On the 21st of April last, Bogle was a driver on the Tenth and Eleventh Street Passenger Railway, was induced to call upon Dr. Winslow for the purpose of having five teeth extracted. The lady who recommended him to Dr. Winslow as a proper person to administer chloroform, accompanied him, and from her testimony it appeared that Mr. Bogle was a difficult subject, and he resisted the influence of the chloroform for about three-quarters of an hour, and afterwards the Doctor administered more, as the patient gave signs of returning consciousness, after extracting some of the teeth. The operation complete, Mr. Bogle left, and on the way to his home complained of giddiness. He continued to complain, and his tongue seemed to thicken to such an extent as to make articulation difficult. The fourth day after his visit to Dr. Winslow, he had an attack of paralysis of the left side. Dr. Winslow was called in, and he left a galvanic battery for his use. No perceptible relief appearing at the expiration of about four weeks, Dr. Longshore was called in, and Mr. Bogle remained under his treatment until the 24th of July, when he was able to go out and resume, in part, his occupation. Being unable to act as driver, he has since been employed as a substitute conductor, and the result has been a greatly reduced income, as his employment is irregular.

Dr. Longshore, who was examined, testified that after hearing the testimony in the case he inferred that the chloroform was the cause of the paralysis; never knew chloroform to be given without producing paralysis; that is its purpose; it is not permanent, however; there are cases reported in the books of paralysis of the tongue, resulting from the use of chloroform; never heard of a case of paralysis of the side; chloroform might produce paralysis of the side by reason of its effect upon the brain; cerebral hemorrhage produces paralysis; never heard of a case of cerebral hemorrhage produced by chloroform; the kick of a horse will produce it; do not think it resulted from such a cause

in this case ; there is no standard for a dose of chloroform ; the operator must be governed by the action of the patient ; if the effect was not produced in three-quarters of an hour I would stop the use of the chloroform, as I would be afraid of the consequence ; there might have been an injury to the brain, brought into action by the use of chloroform, but if it resulted from injuries received two months before, there would be complaints on the part of the patient.

The defence set up that Dr. Winslow was a regular graduate of twenty years' practice ; that he has the confidence of the profession, and on account of his skill in the use of chloroform in dentistry, to which he has confined most of his attention, the gentlemen of the profession are in the habit of sending patients to him. It was further contended that there was no want of skill on the part of Dr. Winslow, as would be established by competent testimony. It would be shown that it was impossible to produce paralysis by the use of chloroform, but it could be shown that the plaintiff received a kick from a horse, on the 26th of January, three months before the visit to Dr. Winslow, and this might be the cause of the paralysis, as concussion of the brain usually produced paralysis.

Dr. S. D. Gross, Professor of Surgery at the Jefferson College, testified that chloroform is regarded by the profession in general as a proper agent to relieve pain ; it is one of the approved remedies of the profession ; in the present case he considered the length of time resulted from the want of the proper number of assistants by Dr. Winslow ; don't think there is any case on record, except two referred to by Dr. Longshore, that chloroform caused paralysis. These two are cases reported by Dr. Haphold of South Carolina, and these cases are not authentic ; I have given chloroform since 1842, and under almost all circumstances—to a child of six weeks of age, and to a person of 75 years of age ; I have given it to all classes, and never witnessed any ill effects from it ; I do not think that the paralysis in this case was the result of the use of chloroform ; in my judgment it had nothing to do with it.

Dr. Gross then explained the effect of a concussion of the brain in producing paralysis ; several months should elapse between the injury and the paralysis ; I think it not unlikely that the patient would complain of headache, &c., though it does not follow that he would actually complain ; if the man had not been kicked by a horse I would not attribute the paralysis to chloroform from what I know of its effects. Dr. Snow, of London, in a late work issued by him, states that he had administered chloroform for fourteen years, and he never knew any permanently ill-effects to be produced by it ; I have given several ounces to patients ; in Louisville I gave a man eight ounces, and kept him

under its influence for three hours; I have every confidence in Dr. Winslow's skill.

Cross-examined.—Chloroform, like many other agents which a physician is obliged to use, is dangerous; so is laudanum, &c.

Ques.—If improperly used, would it not produce paralysis?

Ans.—No, sir.

Ques.—Would it be improper to continue the use of chloroform after a patient has resisted its influence for nearly three-quarters of an hour? Ans.—No, sir; I should continue for five hours until I accomplished my object; I have taken chloroform myself; a patient who resists only proves that he has not taken enough.

Dr. Bishop testified that, on the 26th of January last, Mr. Bogle was brought into his office suffering from the kick of a horse. While driving his car, the horse had kicked him in the breast and threw him on to the sidewalk against a tree box; he was rendered insensible.

Dr. Bishop, Dr. Goddard and Dr. Shellen endorsed the views of Dr. Gross in regard to the harmlessness of chloroform in the hands of a proper person, such as they considered Dr. Winslow to be. None of them believed it to be possible to produce paralysis by its use. The case was not finished.

We append the verdict of the jury.

DISTRICT COURT—JUDGE HARE.—*Bogle vs. Winslow.* An action to recover damages for injuries alleged to have been sustained in consequence of mal-practice. Most of the morning yesterday was occupied with the argument of counsel in this case. The jury, after deliberating about an hour, returned a verdict for defendant.

When the above charge of mal-practice is viewed in every possible light, it seems altogether unnecessary that it should have been set up as a defence, that Dr. Winslow was a regular graduate of twenty years practice. This, really, should have no weight either for or against him, taking into consideration the grounds upon which the charge was made. Practice in the use of chloroform is, we think, all that is necessary to be proven. Even if paralysis had been caused by it, it would have been an accident which none could have foreseen.

It is a noted fact that many barbers are recommended by our best physicians to bleed, leech, and perform other minor operations. To do this is certainly within the province of the duties of a good doctor! Why then does he not attend to it? This

suggests to us the truth, that it is impossible for one man to master and attend to successfully all the sub-divisions of Medical Science. The barber by having cases of this kind daily, will be patronized in such operations in preference to the regular practicing physician. Now, if through defect in the constitution, a patient should die while being operated upon, not being a regular graduate, would the barber be liable to punishment for mal-practice? Legally he might be convicted, but morally he should not be. Certainly, common sense would not dictate such action.

Dr. Winslow by his skill and experience, enjoyed the confidence of the most skillful and distinguished in the profession, who showed their confidence by recommending patients to him. It should have been, therefore, of little matter whether he was a graduate or not. The administration of chloroform as has been proved by accidents in the hands of physicians, is an operation requiring something more than a medical education—and that is experience, daily experience. We would rather hear of the wisest college graduate who administers it but occasionally, being convicted of mal-practice for accidents through its use, than one with daily experience and no medical education through college means.

A. T.

HARRISBURG, February 10, 1863.

Mr. Ridgway read in the Senate a bill to incorporate the Philadelphia Dental College. The incorporators are Rev. Richard Newton, D.D., Lewis D. Harlow, M.D., Peter Rothermel, Geo. Williams, John M. Maris, R. Shelton Mackenzie, William Dulty, George J. Taylor, M.D., Calson Heiskel, and R. L. McClellan. The corporation may hold and carry real and personal estate not exceeding in annual income \$2000 beyond the building to be occupied by the college. The incorporators shall not at any time number more than fifteen, nor less than two. They are empowered to establish a college for lectureships and to confer the degree of Doctor of Dental Surgery upon persons duly qualified to receive the same. The incorporators shall have the power to elect five or more Professors, to constitute the faculty of said College, who shall deliver the lectures and control the course of instruction therein; and no degree shall be conferred, whether honorary or upon the qualified students of the College, without the written request of said faculty.

A FEW WORDS TO THE PROFESSION.

We have always *acted* upon the clearly established premises that the interests of the manufacturer and the interest of the operating Dentist *were* mutual and inseparable. This plain view of our dependence has induced us to cultivate intimate and kindly relations with a profession which numbers upon its honorary rolls so many names distinguished for talent, industry and social excellence. Our position in respect to our customers is close and opposite, but not antagonistic. We intend our manufactures to be the very echo of the intelligent Dentist's thoughts and observations. We aim to be the faithful mirror in which is truly pictured the multiplied and beautiful inventions of the age—an age so prolific of artistical thought and discovery. As the duties of the operator eliminate new ideas of usefulness—remedial, curative, surgical or anasthetic—it shall be *our* duty to give those embodiment, form, and substance.

And, we humbly believe, we shall be found no slow or inefficient vehicle for the supply of the rapidly increasing wants of a generous and intelligent profession. Our business is no mere experiment. We have been employed some years in manufacturing. It is, with us, a Life purpose.

We claim for our IMPROVED TEETH—

1st. *A strength of material* which renders them almost indestructible in the manipulations of the laboratory.

2d. *An ingenious and well matured system* of adaptation of "enamels" to "bodies"—giving our teeth that bony and life-like appearance so much coveted by the skillful and observing operator.

3d. *A great variety of shapes and colors*, many of them expressly designed, in their nature imitating irregularity—to supply a vacancy long complained of by the profession.

4th. *Our newly patented* "Platina Sunk" teeth save an immense amount of labor to the customer, give beauty and smoothness to his work, and add largely to his gains and reputation, by saving of time, neatness, and the tenacity with which they adhere to the vulcanite base.

JOHNSON & LUND,
No. 27 NORTH SEVENTH STREET, PHILAD'A.

IMPROVEMENT IN VULCANITE TEETH.

(PATENT APPLIED FOR.)

The following cuts represent an improvement in adjusting pins in teeth for rubber work.



The posterior face of the block opposite each tooth is cut away or indented, as shown in the drawing, so as to form recesses, across each of which is arranged a platina pin, the latter being imbedded in the material of which the teeth is composed.



Our invention is intended especially for that class of dental work in which the teeth are secured by vulcanizable gum, or other material capable of being converted from a plastic or fluid state to one of hardness and durability.



It has been heretofore usual to form dovetailed recesses in the blocks, or to attach to the same staples or pins with heads, so that the base while soft will enter the recesses or surround the pins or staples, and after hardening, hold the blocks firmly to the base.



The dovetailed recesses alone have been found barely sufficient to give the base the hold required upon the block, which in time works loose. The method of securing blocks by means of pins is open to the same objection; a sufficient surface not being presented by the pins to enable the base to retain the block firmly in its place.



These difficulties we obviate by forming a recess within the block or tooth, and arranging across the same a pin, which, being secured at both ends,

prevents the withdrawal of the material constituting the base from the recess.



It will be seen that the peculiar manner in which the pins are arranged within the body of the tooth tends to strengthen it, by the platina forming a tie as it were across the recess.

VARIETIES.

If you want teeth set *gratis*, intrude upon the premises where a faithful dog watches.

Why are teeth like verbs? Because they are regular, irregular and defective.

The Boston dentists have agreed to raise the price of their work thirty-three per cent., on account of the premium on gold.

An English paper records the death of Mary Harrington, aged 56, a domestic servant. The deceased was chewing a piece of ginger, when the metal which secured her false teeth suddenly broke into halves, and one portion became fixed in the windpipe. She fell down in a state of insensibility, when it was supposed she was in a fit. Dr. Reilly attended, but the woman had expired. He examined the throat, and found part of the plate and two teeth firmly fixed in the throat, whereby suffocation had ensued. The other portion of the plate remained under the roof of the mouth. Verdict—"Acci-dental death."

A party of ladies were the other day discussing the question of drafts, when a young lady inquired the reason why men were exempt who had lost but two or three teeth? "Because they couldn't bite off the end of a cartridge." "Then," replied the questioner demurely, "why don't they soak them in their coffee?"

It is stated in a Maine paper that the Rev. John Buzzell, of North Parsonfield, in that state, an aged and venerated minister, formerly connected with the Free Will Baptist denomination, but who professes simply to be an "Evangelist," and who was a most popular and excellent preacher sixty years ago, is now ninety-five, but enjoys good health and preaches occasionally. It is most remarkable that, within a few years he has had new hair—the hair of his youth; *new teeth* and new eyesight.

Dr. Abbett of Fabius, N.Y., informs us that a patient of his, sixty-two years of age, is *just cutting a wisdom tooth*.

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No. 2.

APPROXIMAL CAVITIES.

A crown cavity, generally exhibiting an unobstructed surface easy of access to excavate and fill, a dentist can, without more than ordinary skill, place a good substantial plug into it. But his patience is very often taxed highly in working upon cavities between the teeth; even if they are easy to clean out, unless great care is taken in introducing the gold, the filling may in a few months become "*mushy*" and come out. Each one, we suppose, has his particular manner of manipulating in such cases; but whatever that manner may be, we think plenty of time should be allowed. We should like very much to hear from our brother dentists upon this subject, especially from those who have a peculiar way of filling aside from that laid down in the books.

We will, as well as our pen will permit us, describe the manner in which we fill approximal cavities, hoping that it will pave the way for remarks from some other member of the profession. To facilitate the description, we will take the anterior approximal surface of the right superior bicuspid. If the space is not large enough to allow us to work easily, we separate the teeth by wedging raw cotton between, and allowing it to remain for two or three days or even a week. We find there is much less soreness, after it has been between a week, than if we treated it in two or three days. After we have obtained space enough to suit our purpose, we proceed to clean the cavity out, and properly shape it. We drill up towards the root at an acute angle, near enough to the edge to give sufficient strength. We cut or drill in the same way towards the point, and the sides, in order to make the interior of the cavity larger than the opening. It is not necessary to make the interior so very much larger, only

enough to insure the retaining of the filling. If it is made much larger the gold is not apt to pack as well. After it is properly cleaned and shaped, we wash it out with a piece of raw cotton dipped in warm water. We then prepare the gold for filling.

Many dentists, we believe, prepare their gold in the morning before they commence operating; but we think the gold works better, if allowed to remain in the book until needed. We cut or tear the leaves into square pieces, the size depending upon the size of the cavity; varying from one-sixteenth of a leaf to one-half of a leaf, or even a whole one. We use No. 5 for every case, large or small, and have found it, in our hands, to work better than any other number. We fold each piece, making a wedge of it. Many use the cylinders and strips, and no doubt succeed as well with them. The manner of folding the gold we think a mere matter of habit, not a great deal depending upon it. A dentist in the habit of filling with cylinders and strips, would find it awkward to use wedges; and *vice versa*, a dentist in the habit of using wedges, would find it difficult to use cylinders and strips.

We now come to the most important part, that of packing and condensing the gold. We are about to fill the anterior approximal cavity of an upper bicuspid tooth, which has been properly prepared. We make the wedges of such a size that three will be sufficient to pack in across the cavity. We take a piece and with our tweezers press it in against one side, leaving about one-sixteenth of an inch to project, and condense towards the side with a straight or slightly curved plugger. We take another and in the same way press in and condense against the other side. A third piece is then wedged in between the two and with a thin upper molar condenser, slightly serrated, the whole mass is pressed up towards the root. The tooth being shaped properly, this will be solid and firm and will prevent the saliva or blood flowing into that part while being filled. Wedges are pressed and condensed in the same way as before, against each side of the cavity, and one in between these two, and the whole pressed up towards the root of the tooth. Two or three of these layers will be found to be sufficient. We put in enough

to fill the whole of the cavity except a small space towards the crown. This space we fill as we would an ordinary crown cavity, pressing the gold against the sides and wedging in the centre. The whole mass is then ready to be condensed, which operation we perform with a straight and flat serated instrument. It is to be condensed gently at first, increasing the force by degrees, until all our power is bestowed upon it. Having condensed it, we file the gold level with the tooth, and finish with Arkansas stone, pumice stone, and a burnisher dipped in Castile soap-suds.

A large cavity in a superior front or lateral incisor and eye-tooth may be filled in the same way. If the cavity is small, after separating, we fill it as we would an ordinary crown cavity, using small excavators and pluggers. We condense the gold against the sides firmly at first and then wedge in the centre, using a straight and flat serated instrument to condense. We use a sharp, fine, separating file, and a thin piece of Arkansas stone to prepare it for the burnisher. We find by dipping this in Castile soap-suds, that a much finer polish is given to the gold. Nearly all the approximal cavities, superior and inferior, anterior and posterior, may be filled in these two ways.

In filling the large inferior approximal cavities, we use the same packing and condensing instruments with which we pack and condense the lower crown cavities. There are curved file holders, manufactured and for sale at the dental depots, which answer the purpose admirably in filing off the tooth and the projecting gold. There are also files made with curved iron or steel handles in connection, but they are so unhandy and coarse that we cannot advise their use. Any size of file can be placed in the holders, and as the handle can be grasped firmly, much more force can be exerted than with the files alone. A. T.

“MIT SANG.”—From the tenor of the following in the “*Lancet*,” it will be seen that the leech’s occupation has fallen into disrepute in old Spain’s sombre capital:—“The authorities of Madrid have prohibited the drawing of teeth in the public streets, because it is derogatory to the dignity of Dentists, and on account of its staining the streets with blood.”

DESTROYING NERVES AND FILLING PULP CAVITIES.

BY DR. L. A. ROGERS.

It is very natural for men to differ in opinion upon the same subject, or to look upon that subject in a different light.

In the March number of the "DENTAL QUARTERLY," I notice an article upon "Destroying nerves and filling pulp cavities," which I think might be properly styled "*Destroying the life of a nerve and leaving it to decompose.*" This I deem very bad treatment; and so contrary to what I consider scientific and practical dentistry, that I cannot let it pass unnoticed.

The writer says, "*I take no especial pains to remove the dead nerve, as experience has taught me that it will always take care of itself.*" This may be the fact; but I find that experience often teaches a dear lesson. The lesson that experience has taught me is so much at variance with that which I have just quoted, that I cannot refrain from giving it.

Teeth treated as directed in the article referred to, have, in my hands, in years gone by, ulcerated and become troublesome in as many as six cases out of every ten. With me such treatment has so often proved a failure, that further experiment in that line ceases with me to be a virtue. I have long since abandoned it, as unsound and improper. It may be a scientific and proper treatment, after the life of any organ is lost, to allow the dead and decomposing organ to remain attached to the living parts. If such is the case, then it may be admissable to retain the dead and decomposing nerve of a tooth, surrounded by bone and other parts in a normal condition.

The practice which I have adopted, and which I find to answer my expectations in all cases, giving entire satisfaction to the patient, is to destroy and remove the entire nerve artery and all its membranous surroundings, and leave nothing but pure, white, clean bone. I then introduce fine gold foil to the point of the root, filling every part of the nerve cavity and the cavity in

the crown with gold foil. I usually use No. 4 Adhesive; packing and welding each piece as perfectly as possible. I keep the cavity perfectly dry. When filled, I find it to answer every purpose, I think, much better than zinc paint or os-artificial moistened with muriatic acid and zinc. I have had but little experience with this great discovery of os-artificial. What experience I have had with it would lead me to condemn it. I have been compelled to refill all teeth which I plugged with it.

If the treatment recommended in the article to which I have referred, should, as there stated, prove good, much labor may be saved to the operator, much time to the patient, and, if os-artificial is as good as gold, much expense too.

MODE OF PREVENTING ALVEOLAR ABSCESS.

BY DR. N. DODGE, N. Y.

My object in writing about Abscesses in the last number of the "QUARTERLY" was not for notoriety, but to state one of a number of cases, that came to mind, and to stimulate to more minute observation those who publish their experiences.

Dr. E. F. B., of San Francisco, in his observations conveys an idea that nature will take care of dead nerves. Does nature fling off dead parts without help generally? Perhaps the Doctor's compound application dries up the nerve of a tooth, so that his observation leads him to suppose that it is not there. The case which he mentions had been treated one year.

My course of treatment is different. I open and cleanse out the root, mummyise it, and fill it. I keep contaminating substances from it, in order that the membrane which covers the root and lines the socket may be kept healthy. If any one will call on me, I will show a tooth from which the nerve was removed about the year 1828, and the nerve cavity filled with gold. This tooth is doing good service this day, and from all appearances will do so some time longer.

CREASOTE.

This substance, originally called Kreosote, (derived from the Greek words for *flesh* and *I save*,) owes its name to the circumstance of its possessing the property of preserving flesh from putrefaction. If fresh meat is placed in a solution of creasote for about half an hour and then dried, it may be exposed to the rays of the sun without putrifying; and in eight days it will become hard, of reddish-brown color, tasting like good smoked beef. It is no doubt the creasote contained in the pine shavings or saw-dust, in the smoke of which meats are prepared for preservation, which acts upon the meat and renders it free from putrefaction.

Creasote being useful in therapeutics and domestic economy, is very interesting, and to none more so than the dentist. It was discovered in 1830, by Mr. Richenbach, in products of the distillation of wood. Some have supposed it to be a volatile oil, derived by heat from the resin of the wood. It is obtained either from wood-tar, or crude Pyroligneous Acid. The latter substance is an impure acetic acid prepared by the distillation of wood. When wood-tar is used, it is distilled until it has attained the consistency of pitch. The distilled liquid divides itself into three layers, an aqueous layer between two oily layers. The inferior oily layer, which alone contains the creasote, undergoes complicated processes of washing and distillation until creasote is obtained.

Creasote, when pure, is a colorless, oleaginous liquid, slightly greasy to the touch, having a caustic, burning taste, a disagreeable odor somewhat like that of smoked beef. As met with in the shops, it frequently has a brown tinge. It unites with alcohol, ether and the alkalies. It is apt to contain other substances, and is sometimes adulterated with rectified oil of tar. These substances are detected by a strong acetic acid, which dissolves the creasote, and leaves them behind, floating above the creasote solution.

It is employed in medicine as a narcotic, irritant, stypic, antiseptic and escharotic. Internally it has been employed in a number of diseases. Externally it is employed as an application to eruptions, wounds and ulcers. It has been also used as a preventive of sea-sickness. It has also been found useful in diarrhea and malignant cholera. When applied to wounds it stops the capillary hemorrhage, but will not stop the bleeding from large vessels. It is also used in deafness. In an overdose, it act as a poison, producing giddiness, depressed action of the heart and convulsions. No antidote for it is known. It is treated by the evacuation of the poison, and the administration of ammonia and other stimulants.

By the dentist, creasote is used daily, playing no unimportant part in his therapeutical practice, as many a distracted mortal can testify. It is used principally in toothache, caused by exposure of the nerve through decay of the bone. It acts soothingly upon the pulp, and one application will very often so reduce the inflammation, that the pain will not return for months. It is used in conjunction with arsenic for destroying the nerve, and is an ingredient of the so-called *paste*, used for the same purpose. It is also used for reducing the sensitiveness of the bone, before excavating for filling; for which purpose some dentists advocate, and others condemn, its use; the latter choosing rather to rely upon the sharpness of their instruments, and their natural quickness and dexterity. In connection with tannin, it is sometimes used, to reduce the sensitiveness of the bone, before filling the root cavity; and some allow a pledget of cotton dipped in creasote and tannin to remain in the apex of the root.

It should be used with great care about the mouth, and no dentist should recommend a patient to use it himself. If placed upon the tongue it occasions violent pain, and if allowed to get on the skin, it will destroy the epidermis. A. T.

The *three-cent* pieces of United States currency make very good white solder, without any addition.

THE DUTY OF DENTISTS TO PARENTS AND GUARDIANS IN REFERENCE TO CHILDREN.

To the miserly, skin-flint dentist, who, rather than lose his fee of fifty cents, will pull a child's tooth two years too early, and thus entail upon the unhappy subject of his malpractice pain and deformity, these lines will come most obnoxiously; but to him who, being a dentist, does not forget that he is also a man, and who does not cease to remember that to alleviate pain is the true destiny of his calling, and that his recompense therefor is only secondary, they will perhaps carry something of the intention with which they are written.

With this belief, we proceed to examine into the merits of our subject, "*The Duty of Dentists towards Parents and Guardians in reference to Children.*"

It is not only the duty, but the true interest of every dentist to, as far as possible, educate his patients to perform properly their own part in reference to their teeth and those of children placed under their care.

Every practising dentist will bear witness that the profession receives more trouble, and more really laborious and disagreeable tasks, from patients who are entirely and criminally ignorant of the first principles of human physiology and anatomy, than from those who have a good general idea of how they are formed, and know when an operation upon the teeth is really needed, and will not insist upon its performance when unnecessary. Such persons having charge of children are careful to watch the formation and growth of their teeth, and at the proper time to bring them before the professional dentist for his examination, and, if necessary, for operation; while they have no whims or fantasies as to the imminent necessity that every tooth should be drawn the moment it aches; and so they relieve the dentist from all external annoyance, leaving him free to use his own judgment and care in the case.

But it is not to be expected that patients will enter upon the study of dentistry, either for the benefit of dentists or of themselves, and it is therefore necessary for the practitioner himself to induct them into so much knowledge as shall be necessary to smooth their road and his own. This may readily be done by acquainting them from time to time with the origin and formation of teeth, the periods of dentition, the causes and progress of disease, and such other matters as may seem important to bring their knowledge; the result will be found, as above stated, to be eminently advantageous to both parties.

We cannot sufficiently express our contempt and abhorrence for the dentist who, rather than take the little trouble necessary to the course we have pointed out, or from a still meaner selfishness, will perform operations against his better judgment and his common sense, knowing that he is about to entail unnecessary suffering on a fellow-being and perhaps cause to be irregular and unlovely, the features which might have been well defined and beautiful. Admitting then that the dentist has honorably and humanely determined to instruct his patient, to the end that as much suffering may be saved as possible, it becomes necessary to point out the way in which this instruction can best be given; and to this purpose we propose to devote ourselves in the present article.

Beginning at first principles, and with special regard to the comfort and future welfare of children, the patient should be inducted into the mysteries of the first dentition.

It will soon be found that the popular ignorance in regard to the formation of the human body is in no case more manifest than in regard to the teeth. For instance, not one in a thousand is aware that at birth the jaws contain the rudiments of fifty-two teeth—twenty temporary and thirty-two permanent. Indeed, the number of the temporary teeth is a matter of speculation to most people. Let it then be understood by the parent or guardian, that at the time of birth each child is endowed with the bodies of ten teeth in each jaw, which, however, only begin to make their appearance through the gums at about the sixth or eighth month; that the obtaining of the full set of temporary teeth varies in time up to two or three years; and that during that time the germs of the permanent teeth are being steadily developed, ready to fill their places when their work shall have been accomplished, and they make their way for their more lasting followers.

If it shall then be understood that the regular and proper development of the permanent teeth depends somewhat upon proper care being taken of the temporary set, the necessity for the most careful observation and attention will at once be made obvious. Of the temporary teeth, there are four *incisores*, two *cuspidati*, and four *molaes* in each jaw; which are finally replaced by the permanent set, beginning at about the sixth or seventh year and continuing until the twelfth or fourteenth year, when the permanent set is complete, with the exception of the *dentes sapientiæ*, or wisdom-teeth. The permanent set consists of four *incisores*, four *cuspidati*, two *bicuspides*, and six *molaes* in each jaw, making thirty-two in all.

Having thus been made acquainted with the names and number of the teeth, it is necessary to instruct as to the manner in which the permanent set succeeds the temporary.

This, it will be explained, is done as follows. The germs of the permanent teeth are situated under the temporary, and in the process of their growth constant absorption is taking place, until the roots of the temporary have been entirely absorbed, the permanent teeth meanwhile steadily following the temporary until the latter are finally driven out of the gums, by the process of shedding, as it is called, and their places are taken by the permanent teeth in the following order :

At about the age of five or six years, the first permanent molars make their appearance above the gums, a sign that the shedding of the temporary teeth is about to commence ; indeed, under favorable conditions, they will then begin to drop out at various times as their roots become absorbed. From this time the teeth require constant and careful attention, and should be inspected by the family dentist at least as often as once in three months.

These first molars are so frequently mistaken for a portion of the temporary set, and such unhappy consequences sometimes result from this error, that the attention of those having care of children should be particularly directed to this point. These teeth are sometimes permitted to go to decay from want of care, and under the impression that they are the temporary teeth, and only following their proper course.

Sometimes they are abstracted from some slight cause, when the whole arch of the jaw becomes imperfectly developed, and the most painful and tedious cases of irregularity are often the result.

The veriest neophyte in dental science cannot but perceive that such carelessness is suicidal, as far as the teeth are concerned.

These teeth are the pioneers and guides of the new set. They stand as land marks in the jaw, and their extraction or loss by any means may be compared to the capture of the outlying pickets of a sleeping army, in disastrous consequences.

Another point is worth notice : these teeth seem to be placed in the exact position where they are most needed, as the temporary teeth are falling out, and the office of mastication must be performed somehow, and falls naturally upon these powerful grinders, so admirably placed to perform their allotted labor.

Sometime between the ages of five and nine years, according to the health and strength of the child, and after the cutting of the first permanent molars, the lower central incisors make their appearance. Next come the upper central incisors ; then the lower lateral incisors, and next the upper laterals ; this is the usual order of appearance, although it sometimes varies. After this there is a period of repose, of varied duration, lasting some-

times from two to three years. Between the eighth and fourteenth years, the bicuspid and conoids, or canine teeth, make their appearance, generally in the order mentioned. Finally appear the second molars, soon after the canines, or at about the age of thirteen or fourteen years, and the set is complete with the exception of the *dentes sapientiæ*, or wisdom-teeth, which are cut any where from eighteen to sixty years of age.

It will thus be seen that no exact rule can be given as to the date of appearance of the permanent teeth: all depends on the constitution, training, and general health of the subject; but if the information we have just suggested be given to the parent or guardian, it will be found to meet every requirement of the dentist, in order that the child may be insured proper treatment, to secure a regular and healthy set of teeth. During the period of shedding the teeth, if a mother has the least pride or ambition that her children shall have beautiful and regular teeth, it will then exhibit itself, even though she may have been before careless and thoughtless in the matter.

That parents should be anxious about their offspring at this period is perfectly natural, and it is not for the dentist to discourage such anxiety, but rather to encourage it; indeed, if every parent would feel such anxiety at such times, their children would reap the benefits of greater care and attention than many of them receive.

It is above all necessary that nature should not be retarded or misled in her movements by any carelessness of treatment which shall permit disease or irregularity in the temporary teeth to operate against the regular and natural appearance of the permanent set; and having disclosed the phenomena, it becomes important to show what conditions may be made to militate against their proper occurrence, and what precautions must be taken in the premises.

It will of course be readily seen upon consideration, that the breadth of jaw which is quite sufficient for ten teeth, would not at all suffice for sixteen; and nature has provided for this important deficiency in the following manner:

At about the third year, a change in the form and dimensions of the jaw begins to take place, which affects the appearance and expression of the whole countenance; from that age until the completion of the permanent set, that portion of the jaw finally occupied by the permanent *molars* gradually lengthens, thus giving room for the increase in number of the permanent over the temporary set.

This fact being remembered, comes the first caution which should be given, as well to the dentist as to the parent or guardian, viz: to avoid the too early extraction of the temporary teeth;

since, if they are drawn before the permanent teeth are ready to take their places, the jaw will not sufficiently lengthen, and an irregular and deformed denture will be the result.

The responsibility then devolves upon the dentist of impressing upon the mind of his patient the great importance of not tampering with the extraction of children's teeth: if they seem to need professional attention, they should at once be placed under the care of a competent dentist.

Sometimes the excuse of the parents will be, that they are unable to bear the necessary expense which would accrue under professional treatment. To this the answer should be, that the dentist, if he has any feelings of humanity, will undertake to give the necessary advice gratis, rather than permit a child's teeth to be ruined for want of it. But it is not from poverty alone that people permit themselves to assume the responsibilities of the dentist: often we see those who are in easy circumstances thus tampering with the health, beauty, and comfort of their children. How often have we seen the poor little innocent child, with the thread tied about the offending member, made to suffer all kinds of torture, in the misguided attempts of parents take upon themselves a trade of which they know nothing, and for whose practice they are thoroughly incompetent. The impropriety of such action as this, under any circumstances, ought to be severely commented on by every dentist, in his conversation with his patients: there can be no excuse whatever for such reckless and needless want of common care in the treatment of children.

Every dentist knows that some of the worst cases of irregularity coming under professional treatment, are those resulting from some such action as we have just described concerning the second denition. The best dentist in the profession may well be puzzled to decide when a temporary tooth should be removed in order to obtain the best result, even after the most rigid and careful scrutiny; how seldom then should those having no possible acquaintance with the conditions of the mouth and teeth, venture to change them at hap-hazard! Finally, it should be remembered that the same beneficent and all-wise laws that provide for the coming of those teeth that are to do service for a life time, provides also for the proper disposal of those which are no longer required. If by reason of disease, or faulty organization, the human system is unable to second nature in her efforts to provide for its well-being, then, and then only, may the dentist come in with his assistance as needed. We are the victims of interference with nature's laws, generations back, and, from birth until death, must sometimes receive aid from science; but that aid ought

never to be offered unless absolutely needed, and then only by those fully competent to give it properly. If this rule were followed by all, much suffering and much disfigurement would be saved.

The motto of when we are in health we need no medicine, is as applicable in dentistry as in medicine.

Having thus shown the importance, and indeed absolute necessity, of care in reference to the natural and regular development of the teeth, and the manner in which irregularities may be guarded against, we come now to a division of our subject of primary importance, and which cannot be too strongly impressed upon the minds of those having the care of growing children; we refer to the necessity for that attention which aspires only to produce absolute cleanliness and purity in the teeth, as a means subservient to the end of giving the necessary strength and ability to perform their required duties of the temporary as well as the permanent teeth. This subject has been far too lightly touched upon, not only by our dental periodicals, but by those who have had the care of advising families upon matters relating to the teeth, and upon whom really rests all responsibility in the premises. Some dentists think so much of the present, and so little of the future, that they really conceive that by permitting their little patient's teeth to fall into disease and decay, which timely advice would have prevented, they are subserving their own best interests, forgetting that the duty of the physician is prevention as well as cure, and that the little sufferers, or those who have charge of them, will hardly feel confidence in one who could have saved pain, and carelessly or meanly refused to arrest it when a few words would have done so, for the sake of perhaps a contemptible fee more or less.

Such men disgrace their profession and injure themselves in the eyes of their patients, who will be much more willing to trust their dentist, if they perceive that he has some friendly sentiment for their interests as well as his own, and is unwilling to trifle with their health for unworthy considerations. If the dentist wishes to make himself the friend and respected adviser of families with which he has professional connection, let him take our advice to heart, and by a few occasional words of caution, show to his patients that he is above all the mean trickeries which his greater knowledge might render safe, and he will soon reap his reward of extended patronage, as well as a clearer conscience.

Let him then impress upon the minds of those who have the care of children from their birth, that the first, last, and greatest rule for the preservation of the teeth is *cleanliness*, CLEANLINESS CLEANLINESS! All conceivable ideas exist in the popular mind

as to the *modus operandi* of keeping the teeth clean : with some it is a periodical duty, performed every morning before breakfast, and consisting of a hasty rub with a brush dipped in tooth-powder, a rinse with a mouthful of water, and a "thank God !" that it is done : with others, a scouring with some acidulated nostrum, much more deleterious than entire inattention, causes their teeth to look cleanly for the time, and encourages destruction for the future : with others, entire confidence in Providence, and no care whatever, is the general rule : finally, thank Heaven ! there are those who rate cleanliness as next to godliness, and keep their teeth as pure as infants' consciences ; they are those who come to the dentist as the refreshing showers to the parched earth. This with regard to adults. As to children, who ever trouble themselves as to whether their children attend to the cleanliness of their teeth, even when quite grown up ? and who ever dreams of such application to temporary teeth ?

Now the manner in which to treat such persons is to shame them by the application of a little common sense. If asked as to a condition of dirty face, hands, feet, head, or body, their answer would at once be, an application of soap, sand, brush, and, if necessary, pumice-stone. Now the only point is to make them sensible of the importance of similar treatment in regard to the teeth, and the work is done. Let them be made to understand that the teeth are the most delicate, as well as the most beautiful and the most prominent of the organs of the human frame.

Let it be impressed upon their minds that, from inception up, they need the most fostering care, to prevent the insidious attacks of the secretions and acids of the mouth, increased in power by neglect and carelessness, which promote the accumulation of substances in the mouth and between the teeth, which finally result in those agents so deleterious to the composition and structure of the teeth. Let them be instructed that this attention and care should not alone be confined to the permanent teeth, which are better able to bear the dangers to which they are exposed ; but that the temporary set—those frail and ephemeral little models of beauty—depend greatly for existence upon the attention which they nearly always fail to receive.

Finally, let it be told to parents and guardians that the teeth *must be kept clean* from their first appearance. Before children are able to attend to such things themselves, their parents or guardians should do it for them. But it will be found that with a little instruction and encouragement, they will regard the handling of a tooth-brush as a privilege, and be even more faithful to it than adults. If the teeth cannot be kept clean with brush and water, let soap, tooth-powder, charcoal, pumice-stone,

or any thing be used which will keep them clean, with the one principle in view, that *clean they must be*. By this means we keep off decay, which is very likely to appear among the temporary teeth.

We do not mean by our remarks to recommend using charcoal, pumice-stone, and all such harsh remedies, as a tooth-powder for constant or even occasional use, except in extreme cases. The idea we wish to convey is, that should cold water and the brush fail, or tooth-powder with brush, when thoroughly applied, not be sufficient to keep them perfectly clean from any cause, then use any thing that will produce the result without destroying or injuring the teeth, the same as you would do with your child if he should make his appearance in your presence with a soiled face. All that is necessary to do is to be as scrupulous about keeping the teeth clean as the face.

If parents could be made to understand how much pain could be prevented and spared their little ones, for whom they would sacrifice every thing, even life itself, and the long and wakeful nights they are often compelled to pass, the many dollars to be expended for regulating and filling teeth, and in fact the thousand ills that might be avoided by timely attention, we are sure the responsible parties would be thoroughly awake to their duty.—*N. Y. Dental Journal*.

NOTICES OF BOOKS, &C.

"*The People's Dental Journal*," is the title of a new quarterly edited and published by Drs. Allport and Creighton, of Chicago, Ill. Its object is to educate the masses on all subjects pertaining to the teeth. It has several able contributors and no doubt it will be, as it should be, well received by the people and the dental profession. It will not be found uninteresting to the latter, and since it is high-toned each member may find it pecuniarily advantageous to have a copy on his reception room table. We wish the editors success and hope that their journal will be longer lived than such journals generally are. Fifty cents a year in advance is the price of subscription.

The following article on the *Care of Fillings* will show the general style in which the book is written :

"Will the reader allow a little circumlocution ; for a fact stated without a reason, and without being understood, is a fact stated to be forgotten.

"Very many persons, if not the majority of those who value their teeth, and mean to take the proper steps for their preservation, suppose that when they have been to the dentist and had their mouths put in order, their work is done until the time comes round for the periodical examination, and that the responsibility of any possible failure is entirely with the dentist. This is a mistake, for when the teeth have been properly filled and the entire mouth got into a sound and healthy condition, *then* comes the responsibility upon the patient of keeping it so. But how is this to be done? is asked. Well, let us go back a little and inquire into the "rationale" of the decay of the teeth, and the object to be accomplished by filling them. First, then, the decay of the tooth is caused by the action of some acid upon the limy portion of it; almost any acid has some effect upon this structure, though different acids act with different degrees of intensity, and it is proper to say here, that lemon juice and tartaric acid which are so frequently used, are among the most destructive agents to the teeth of any that can be taken into the mouth without injuring the lips and tongue. But to return to the subject: this contact of acid with the tooth gradually decomposes it, and at last we find a cavity of greater or less extent as the result of it. What now? Well, it must be filled. How? First, by removing all of this decayed matter till we come to that part of the tooth that is sound and unaffected by the decay; next, by shaping the cavity so as to retain the filling as securely as possible; then by packing in and rendering as nearly solid as may be the gold or other material for filling; and lastly, by filing this filling down perfectly level with the edges of the cavity, and polishing it as completely as circumstances will allow. What have we then? Simply an indestructible substance, or nearly so, replacing the decayed portion of the teeth; protecting the spot it covers, and nothing more. But, it is asked, if this be true, will not the tooth go on to decay again? Certainly it will, if the same causes are still allowed to act upon it which originally produced the decay.

Now it scarcely need be said that if the teeth could be kept perfectly clean, and free from contact with all extraneous matters, neither acids nor any other substances would have any opportunity to act upon them, inasmuch as there would be none present in the mouth; hence it follows, that the nearer the teeth are kept to perfect cleanliness, the greater will be their freedom from decay, and although we must eat, and must, from various causes, have more or less of that which is deleterious to the teeth, often in the mouth; still, by taking pains to thoroughly cleanse the teeth every time that food or other matter is taken into the mouth, which is, or may become injurious, we can

go very far towards obtaining immunity from the decay of these organs. Thus it is seen how we may, in a great measure, prevent "the continued action of the same causes which originally produced the decay;" and we at once see that the responsibility of the patient in keeping the edges of the fillings which he causes to be inserted (and consequently the whole of it) clean, and free from all foreign substances, is quite equal to that of the dentist; for, let his work be ever so well done, if the patient fails in his duty, the operations will as surely fail, in time, as that decay goes on in the mouth.

MEETING OF DENTISTS.

A meeting of dentists was held at Concord Hall, in this city, on Tuesday evening, May 19th, for the purpose of organizing a Dental Society. A constitution and by-laws were adopted. The society is to be called the Odontographic Society of Pennsylvania. All dentists of this State, in actual practice, of good moral character and over twenty-one years of age, are competent to become members. The object is to promote social intercourse, to encourage investigation in everything relating to dentistry and the collateral sciences, and the reading of essays by the members. The meetings are to be held on the first Tuesday evening of each month.

A. T.

THE AMERICAN DENTAL CONVENTION.

Will hold its ninth annual session on Tuesday, August 4th, at Saratoga Springs, N. Y. We trust it will be well attended. The good resulting to the Profession from these kindly re-unions, in the interchange of generous sentiments, the advancement of liberal ideas, and the soothing festivities which attend these occasions, is incalculable. The list of subjects for discussion comprehends about the usual melange. Let the Profession attend.

J.

HEMORRHAGE STOPPED BY USING NITRATE OF SILVER.

Mr. Ray communicates to "*Braithwaite's Retrospect*," his method of arresting hemorrhage. We append the case in his own words:—"Upon placing the patient with a slight inclination backwards, she instantly choked, and it being night, and in the upper jaw near the throat, I had much trouble in obtaining a view of the situation of the hemorrhage, which flowed as freely with the pressure of my finger in the socket, as with the addition of small pledgets of lint steeped in a solution of alum. After an ineffectual trial of these means, I took a small tack of nitrate of silver, rounded at the extremity, and firmly forcing it to the bottom of the cavity, allowed it to remain a few seconds in that situation. Very little pain was expressed, and upon its withdrawal, I was gratified by finding a complete cessation of the

The mouth was kept open with a cork for about an hour, to admit air freely, and ensure the preservation of the clot, which might have been disturbed or removed by suction. She then took forty minims of opium and a teaspoonful of compound spirit of ammonia, and afterwards rested five or six hours. With the exceptions of the unpleasant *cupreous* flavor communicated to all nourishment for the next few days, nothing was complained of but extreme exhaustion, which was many months in disappearing."

ROSE COLORED TEETH.

"*The Medical News and Library*" gives the statement of a Vienna professor, who relates that two girls (twins) were placed under his care, each having teeth of a peculiar *rose color*. On the shedding of the first teeth, the permanent set also appeared of the same rose red color, and only paled off after some years, never losing the reddish tint entirely. This appearance is difficult to account for, as no other member of the family shared the same peculiarity, nor was there any difference in the mode in which they were brought up.

TEETH AT BIRTH.

A correspondent of the *American Medical Times*, says :—
In the Lying-in Wards of Bellevue Hospital there are now two infants under my care, *who were born with teeth!* One is a male which weighed $6\frac{1}{2}$ pounds at birth, fully developed; right middle incisor in lower jaw well formed and protruded, but placed athwart the jaw. The other is a female which weighed at birth 7 pounds. This was also fully developed; two middle incisors on the lower jaw, both well formed but loose, right incisor set obliquely in the alveolar process.

CHANGE OF LOCATION.

We see by our business notices that our genial and active business friend, Mr. A. Jones, has removed to 724 Broadway. Mr. Jones is perhaps as favorably known to the Dental world as any man in America. His pleasant temperament and first-class business capacity, have endeared him to thousands who will gladly recall so many pleasant recollections which have survived the accidents of time and chance. May he be successful. J.

TO CUSTOMERS AND DEALERS.

Many Dentists have complained recently of our inability to fill all their orders. This has, we are aware, been a subject of just complaint, but it is being rapidly removed. The accessions to our manufacturing facilities in the erection of a large manufactory on Filbert Street—the absorption of the area on Seventh Street—the erection of additional furnaces—and the exclusive control of a quarry of the best material, contiguous to our place of business, give us confidence that we shall be able to supply any demand, however large. J.

Let azure eyes with coral lips unite,
And health's vermilion blend with snowy white;
Let auburn tresses float upon the gale,
And flowery garlands all their sweets exhale:
If once the lips in parting should display
The teeth discolored, wasting with decay,
The spell dissolves, and beauty in despair,
Beholds her fond pretensions melt in air.

VARIETIES.

NEW METALS—By means of a chemical process of extraordinary delicacy, M. Bunsen has discovered two metallic elements belonging to the group of alkale metals. No less a quantity than twenty tons of the mineral water of Kreuznach, in Germany, was evaporated, the result being a residuum of two hundred and forty grains of the platinum salt of a new metal, which has been named *cæsium*, from the latin word *casius*, signifying grayish blue, that being the tint peculiar to the new metal. Further investigations led to the discovery of another element, which, from the circumstance of its yielding two very dark lines, has been termed *rubidium*, from the Latin, *rubidus*, dark red. Both of these metals, it is stated, resemble potassium so closely, that they cannot be distinguished from it by the usual re-agents, or before the blowpipe.

IMPROVED COMPOSITION OR CEMENT—Among the recent English inventions is a new kind of cement or composition, which may be used as a substitute for plaster of paris. In its manufacture, quick lime in the state of powder is submitted to the action of a sulphurous acid gas. The slaked lime is passed through a revolving screen which sifts it, then it is carried down a shaft lined with fire brick, which shaft is heated by a fire on the side. The heated lime, in a thin shower, is here met by a stream of heated sulphurous acid gas, and is impregnated with it. The gas is prepared by placing sulphur in an iron vessel, having a fire underneath it; and as the sulphur burns, the gas is given off in large quantities. One pound of sulphur to eighty pounds of lime is required. Iron pyrites may be used instead of pure sulphur. The sulphurous gas is also conducted to mingle with the flames of a furnace before it mixes with the lime, so as to combine it with a considerable quantity of oxygen. The lime is thus impregnated with the sulphurous acid gas is now cooled and fit for use as a cement. In nature this cement is similar to roasted plaster paris, and may be used for like purposes.

The muscles of the human jaw produce a power equal to 43 pounds. This is only what science tells us; but we know that the jaw of some of our lawyers is equal to a good many thousand pounds a year to them.

The following is a paste for destroying nerves:

R Cobalt, (pulverized very fine,) 1 ounce.
Morphia, Sulphate, $\frac{1}{4}$ "
Creasote, enough to form a thick paste.

To be placed in *contact with the nerve* and allowed to remain twenty-four hours.

IMPROVEMENT IN VULCANITE TEETH.

(PATENT APPLIED FOR.)

The following cuts represent an improvement in adjusting pins in teeth for rubber work.



The posterior face of the block opposite each tooth is cut away or indented, as shown in the drawing, so as to form recesses, across each of which is arranged a platina pin, the latter being imbedded in the material of which the teeth is composed.

Our invention is intended especially for that class of dental work in which the teeth are secured by vulcanizable gum, or other material capable of being converted from a plastic or fluid state to one of hardness and durability.

It has been heretofore usual to form dovetailed recesses in the blocks, or to attach to the same staples or pins with heads, so that the base while soft will enter the recesses or surround the pins or staples, and after hardening, hold the blocks firmly to the base.

The dovetailed recesses alone have been found barely sufficient to give the base the hold required upon the block, which in time works loose. The method of securing blocks by means of pins is open to the same objection; a sufficient surface not being presented by the pins to enable the base to retain the block firmly in its place.

These difficulties we obviate by forming a recess within the block or tooth, and arranging across the same a pin, which, being secured at both ends, prevents the withdrawal of the material constituting the base from the recess.

It will be seen that the peculiar manner in which the pins are arranged within the body of the tooth tends to strengthen it, by the platina forming a tie, as it were, across the recess.

TETE-A-TETE WITH OUR READERS.

"When you are in the society of Dentists always keep your mouth shut," was the jocose remark of a medical gentleman with whom we conversed recently. At the risk of being charged with an excess of "jaw," we must avail ourselves of our pleasant editorial privilege of a short *tete-a-tete* with our readers.

The conception and growth of the science and art of which we are illustrators and co-laborers with so many thousands of our esteemed customers, is curious, as exhibiting the slow and irregular development of this most useful of sciences. We will hardly peep into the mists of antiquity for the inceptive ideas which furnished the root from which have sprung the thousand ramifying branches of Dental Science. History, sacred and profane, are equally reticent. It is hinted that Samson did a little effective "jawing" in his memorable encounter with the Philistines, with the same weapon, by the way, which proves so effective with some modern politicians we wot of. Moses, we suppose, had reference to our speciality, when he commanded the extraction of a "tooth for a tooth"—a version of the *Lex talionas* which would have furnished a harvest to dentists.

In supplying the *hiatus* made by the loss of a favorite incisor, braves and beauties have availed themselves of almost everything. Bits of colored glass, human teeth, teeth from neat cattle, from the elephant and hippopotamus, have been used, but it was not till the beginning of the present century that an ingenious Frenchman hit upon the expedient of manufacturing teeth from the materials of which they are now composed.

It would be curious, if it were not tedious, to trace the progress of manufacturing indestructible teeth from the first amorphous botch made by the thoughtful Frenchman down to the splendid specimens of modern manufacture. Teeth are now made, the gum of which is so flesh-like and natural that it requires almost hypercritical examination to distinguish the difference between the natural gum and the imitation. Bodies and enamels are prepared with such a happy affiliation for each

other—the colors so gently and beautifully gliding into and softening their respective shades—the forms so nearly approximating to naturalness under the cunning fingers of skillful workmen directed by a master mind—that it seems a marvel, indeed, that human skill can produce from the senseless clay so wonderful and beautiful a transcript of the regretted original.

And, we admit, we have not arrived at this perfection at a bound. We cheerfully acknowledge our indebtedness to the many able men who have delved so industriously in this mine of enterprise, and have laid before us the rich ore of their observations.

Our only claim is, that we have discarded much that is superfluous—that we have elicited new light and made new observations, and new combinations—that our Indestructible Teeth *do most essentially differ*, both in *material* and *combination*, from those of other manufacturers—that we have prepared new elements—that our teeth are *stronger in body* and more natural in appearance, and better adapted to the wants of the Profession than any now made elsewhere.

The superiority of American Teeth, based upon the excellence of the materials of which they are composed, is rapidly giving them precedence where those of English and French make were used previously. The prospect of remunerative gains has enlisted in the manufacture of Porcelain Teeth a large amount of capital, industry and skill. The wholesome stimulants of active rivalry, and the pride of personal success, have been the irritants which have spurred us on to efforts to produce wares which have secured for us no unenduring reputation.

Our materials are selected with the utmost care and from the purest sources, neither pains nor means have been spared in procuring the best assistance in the varied manipulations in the process of manufacture. We have recently extended the area of our manufacturing establishment several hundred feet, and have been compelled by the necessities of our increased business to employ more workmen, erect new furnaces, and in thus adding these auxiliaries, have secured redoubled strength and ability.

J.

• TESTIMONIALS.

ARTIFICIAL TEETH.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's; having used nearly all others.

JOHN L. CLARK, Waterloo, N. Y.

MESSRS. JOHNSON & LUND:

Gentlemen—Having used your Teeth in my practice for the past year, and finding them SUPERIOR to all others in BEAUTY, NATURAL APPEARANCE and DURABILITY, I hereby add my humble testimony in their favor.

Yours respectfully,

B. F. CLARK, Flint, Michigan.

I have used Teeth from the different manufacturers for ten years and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their resemblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blowpipe, show that the proportion of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN, Philadelphia.

This is to certify, that we have used the teeth of Johnson & Lund, of Philadelphia, and think them superior to all others in use.

CONKEY & FRENCH, Elmira, New York.

The Teeth of Messrs. Johnson & Lund's manufacture, I am using in my practice, and can find no fault with them.

G. B. BROWN, Danville, Pa.

MESSRS. JOHNSON & LUND:

Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers; they are very much admired, particularly by the ladies, for their beauty and natural appearance in the mouth.

Yours respectfully,

E. C. KESTER, Danville, Pa.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession as a *decidedly superior article*.

F. O. HYATT, Cortlandville, New York.

MESSRS. JOHNSON & LUND:

Gentlemen—You ask me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The *beautiful shape*—the *life-like* and *natural* shades, and their *strength* under the *blow-pipe* and *hammer*, render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth, deserves the thanks and substantial support of the dental profession. Wishing you success, I remain,

Yours truly, M. LUKENS LONG, Philadelphia.

MESSRS. JOHNSON & LUND:

Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*

A. H. FOWLER, Ithaca, New York.

THE DENTAL QUARTERLY.

VOL. 2. PHILADELPHIA, SEPTEMBER, 1863. No. 3.

DENTAL ASSOCIATIONS AND DENTAL COLLEGES.

The rate at which dental societies are forming, indicate an increased interest in the advancement of dental science. It will not be long before every state can boast of one or more such organizations. The mean, contemptible selfishness, which has so long characterized the profession, inducing it to fix its knowledge at an exorbitant price, is succumbing to more brotherly and benevolent feelings. Such a spirit will not be without its reward; no one learns more nor faster than a teacher. These local societies will indeed prove a great blessing to each member; and the day is not far distant when all will rejoice in saying that they are permanent institutions. To make them such, there must be active directing minds, who will so regulate the order of proceedings, that each meeting will be a source of pleasure, as well as profit, to all. To prevent jealousy and ill-feeling, to guard the modest and unassuming from the encroachments of the professional speaker, everything should be done in decency and order. A reasonable amount of time should be given in discussion to each one, and for that purpose the time well regulated. None should speak twice on the same subject, until all have expressed their opinions. This will prevent undue infringement by the quick-witted and the quick-spoken, and the annoyance and nervousness of being compelled to fight for time, like forty hungry dogs for a single bone. Men should learn to avoid repetition of words and thoughts, and the introduction of flowery speeches, which, however beautiful in their place, are not

wanted on such occasions ; and nothing will aid them so much in this respect, as the restriction of time in which to express their ideas.

The American Dental Association held its annual meeting in this city, during the last four days of July. It meets at various places designated by vote. It is composed of delegates sent from local societies, and permanent members, being delegates sent at previous meetings. Members are appointed at the previous meeting to read essays on given subjects, which are discussed and commented upon by the members ; who alone have the voice in such discussion. Other subjects and business of importance also receive attention. Its success will depend upon the success of the local societies, and we therefore trust that dentists will recognize the importance of the latter, and thus do their mite towards its perpetuity. In coming years, we have no doubt, it will be classed among the most useful and important scientific associations.

The intelligence, refinement and general advancement of the dental profession, like that of a community, will depend upon its institutions of learning. It is an encouraging fact, that of late years many dental colleges have sprung into existence. As respects a general education, more can be learned at a school than at home, because there are more and better facilities at the former place for giving and receiving instruction. There are many teachers and professors, who, although they have time to act in the capacity of tutors towards their own children, yet prefer sending them to school or to college, not merely to get rid of the trouble, but to enable them to receive a more thorough and a more practical education, in a less space of time. Just as applicable, if not more so, is this to the dental student. At college there are extensive collections of Anatomical, Pathological, and Mineralogical specimens, besides Philosophical and Chemical apparatus, seldom possessed of by private preceptors. The lectures also are illustrated by means of diagrams, models, &c., of every known form of dental anomaly or disease. Experiments are made, and various cases demonstrated, in order that truth may be imprinted indelibly upon the mind. Every process

known in the profession, of any value to the dentist, is generally made known. Access is also had to the hospitals, infirmaries, dispensaries, &c., being sources of profit, interest and pleasure. On account of free operations, a great number of patients are drawn together—a great advantage to the student, since he is thus furnished with living subjects, on whom to practically investigate or demonstrate the truth of what has been taught him. The operating rooms are open daily for this purpose. Being superintended by one of the professors, the inexperienced are taught the proper mode of manipulating; and practising thus daily are enabled to make rapid advancement; probably gaining in months, what would otherwise take years to accomplish.

At this day, however, it is not to be supposed that any but the wilfully ignorant or self-conceited, will refuse to acknowledge the claims of our dental colleges. We know there are many, who, by dint of hard study and long practice, have made themselves “of good report” in the profession; and who are revered and respected on account of being self-made men. But our young students must recollect, that the days of these men are fast passing away; that the wilderness is cleared, and “new things are coming to pass;” that the day is near at hand when our colleges will be looked upon as of so much importance, that none but the “regular graduate” will be respected or patronized—or if patronized, it will be only in the capacity of a *quack*. People are being educated in regard to the requirements of a good dentist—and it behooves those who are yet young, whose years of practice do not yet number a score, to awake to the importance of availing themselves of the privileges of one of these institutions, and to the necessity of possessing “the parchment.” With this hanging on the wall, they can proudly walk their office floors, and aver that they have done something towards elevating the dignity of the profession.

Every state we think ought to support at least one dental college. No obstacle or opposition should deter those “who have it in their hearts,” from pushing on the good work. The more there are, the more will every student see the necessity and advantage of attending; and greater will be the good resulting

from each one. Pennsylvania can now boast of two. The Philadelphia college was recently incorporated, and although much influence was exerted against the passage of the act, yet the paltry reasons assigned against it failed to have any effect upon our legislators. The fact of this being the nineteenth century, went far, perhaps, towards influencing them in their sensible decision. This college will be opened this coming fall. The building is in Tenth street, at the corner of Arch street. Our professional brethren would do well to pay it a visit. It is a new institution, and a *good* institution, and it is the duty of all to encourage it. Let it not be said that there was not strength or ambition enough in our ranks to ensure its success. The course of study will embrace Dental Physiology, Operative dentistry, Mechanical dentistry, Metallurgy, Anatomy, Physiology, and Hygiene, Institutes of Dentistry, and Chemistry. The regular session will commence on the first Monday of November with a general introductory lecture, and continue until the close of the ensuing February. The dispensary and laboratory will be open and preliminary lectures will be delivered every day during the month of October. The lecture on Wednesday of each week at 3 P. M. will be devoted to Clinical teaching. During the regular session, the clinics will be held on Saturday at 3, P. M. Notice of the first annual session will be found in our advertising columns. We wish it success. A. T.

SUPERNUMERARY WISDOM TOOTH OSSIFIED TO THE
LEFT INFERIOR DENS SAPIENTIÆ BENEATH
THE GUM.

DR. W. W. SLACK.

Deeming it my duty to acquaint the profession with anything remarkable in my practice, and as the simple operation of extracting a tooth has proven to me in a singular manner, the solid incorporation of one tooth with another, I herewith present the facts of the case. Osseous formations, involving the

roots of the teeth, and also the alveolar process, are often met with; but this case is entirely different, being curious as well as remarkable.

A lady, twenty-five years of age, called upon me seven weeks previous to the operation, and wished me to examine her teeth. Upon inspection I found *all the teeth perfect in every particular*, and upon sounding them no painful sensation was experienced. She could not herself locate the pain, or point out any particular spot where the pain was greatest, as the whole side of the head appeared to her to be affected. As there was not sufficient evidence to justify me at the time in censuring any particular tooth as the cause, I lanced deeply and applied a pledget of cotton moistened with ether, which gave temporary relief and of course all that I expected. I then informed her that the disease, whatever it might be, was not sufficiently developed to enable me to form a correct diagnosis, and dismissed her, recommending her to consult a physician, (since she was in bad health,) and if the result was not beneficial, to call and see me by all means in a few days. Seven weeks elapsed, however, and I heard nothing from her; at the expiration of that time, her husband called to inform me that his wife was suffering intense agony, and wished me to return with him. Being unwell myself, I declined going; he then came to the conclusion to bring her to me. She came and informed me that she had the attendance of three physicians—at the expense of thirty dollars—one being Homœopathic, without receiving benefit from any of them. They all agreed in exonerating the teeth from any share in causing the suffering. I again examined her teeth and observed the coronoid apophysis of the left inferior maxillary approximating closely upon the *dens sapientiæ* and rising considerably above it. Upon pressure this occasioned considerable pain, which led me to conclude from the position of the *dens sapientiæ* that roots of it had taken a lateral direction running directly backward. I concluded to remove it; after explanation I did so with her consent, under the influence of ether, and without the forceps letting go the tooth. I turned up the root to examine it, and immediately pronounced it exostosis; as the root was hidden

altogether, by a thick gristly substance (possibly diseased periosteum.) I was thus deceived. It appeared about the shape and size of a small marble. Subsequently, while the lady was recovering from the effects of the anæsthetic, I examined it minutely; upon removing the gristly covering I ascertained it to be the crown and root of a perfectly developed tooth (single root with a slight protuberance, as if another root had been there) wound partly around the posterior surface of the crown and root of the dens sapientiæ and perfectly incorporated with it.



Posterior view.



Buccal view.



Lingual view.

The operation gave immediate relief and in a few days the lady was perfectly recovered from her severe indisposition and suffering.

TEMPORARY RUBBER PLATE MADE TO FIT THE JAW AFTER ITS ABSORPTION.

DR. J. T. ABBOTT, FABIUS, N. Y.

Having had some trouble with temporary plates, after being worn three or four months, in consequence of the absorption of the jaw, rendering the plate useless in a few cases, I have been in the habit heretofore of making new temporary plates; but a neighboring dentist suggested to me the plan of taking an impression, and procuring a plaster model; then after the plate is heated over a lamp, or in hot water, to press it upon the model; this so modifies the shape that a fit can generally be obtained.

I met with only partial success with the above plan, but have adopted one which proves more successful, with but little additional labor. It is to take an impression, procure a plaster

model, and from that a zinc cast. As soon as the cast is sufficiently cool to remove from the sand, I place the plate upon the hot cast and press it firmly to it, retaining the plate there by pressure until cool. Zinc retains heat longer than most of the soft metals and is sufficiently hot to soften the plate for altering as desired.

In using the plaster model alone for pressing the plate, little prominences and rugæ are liable to be broken from the plaster so as to defeat the object entirely. We obviate this objection by using the zinc cast. The same plan will work well in cases of any misfit where rubber is the base. Napkins will be required for holding and pressing the plate to the cast, and burnishers may be used with advantage in cases of a very irregular ridge.

* * * * *

I have used several sets of Johnson & Lund's teeth, with the new patent arrangement for fastening to rubber, and find them superior to anything I have yet used. I can see no possibility of their getting loose from the plate and I can grind and fit them much closer to an irregular alveolus, without any liability of the pins breaking loose from the slit in the body of the tooth. I consider it the greatest improvement yet in rubber teeth fastenings—the *ne plus ultra* in that direction.

ARSENIOUS ACID.

Arsenic is a very old metal, having been known to the ancients. In combination with sulphur, under the name of Sandarac, it was noticed by Dioscorides. Its peculiar nature, though, was first demonstrated by Brandt in the year 1733. It is a brittle metal of a crystalline structure, of a steel-gray color, possessing much brilliancy when first broken or sublimed, but if exposed to the air, its surface becomes dim. Its texture is granular and sometimes a little scaly. It is devoid of taste. It sublimes at 356° without fusing, giving rise to white vapors with a garlicky odor, and in contact with a hot coal gives a blue

flame and white smoke. It forms two combinations with oxygen, both having acrid properties, called *Arsenious acid* and *Arsenic acid*. It also forms three combinations with sulphur, called *Bisulphuret of arsenic* or *realgar*, *Tersulphuret* or *orpiment*, corresponding in composition with arsenious acid, and *quinto sulphuret* corresponding with arsenic acid.

Arsenic acid is chiefly prepared in Bohemia and Saxony, where it is procured on a large scale as a collateral product during the smelting of Cobalt ores, which are almost invariably accompanied by arsenic. By roasting these ores in reverberatory furnaces, with long horizontal flues, the arsenic is converted into arsenious acid which rises as a vapor and condenses on the sides of the flues. This product is impure and requires to be again sublimed in cast iron vessels, fitted with conical cast iron heads with an opening at the summit. The vessels are then brought to a red heat by means of a furnace. The impure arsenious acid is thrown in the opening by portions. The opening is stopped as each portion is thrown in. When one portion is sublimed another is thrown in, until the whole in a similar manner is exhausted. The vessels are then allowed to cool, and upon removing the heads the purified acid is found attached to them in vitreous layers, transparent as glass. By contact with the air they become opaque at the surface. These layers are then broken into fragments and are ready for the market. It is principally shipped from Hamburg and Bremen in casks containing from two to five hundred pounds. As it occurs in commerce it is in masses. It is of a milk white color exteriorly, but internally it is often transparent. As found in the shops, it is often in the form of a white powder as fine as flour. In this state it is sometimes adulterated with powdered lime or chalk. These substances can be detected by evaporating the arsenious acid, when the impurities will be left behind. It has no smell; the garlicky odor attributed to it belongs to the vapor of the metal. It is soluble in water. It passes under the name of Arsenic, and is generally sold in the shops as such. But there is a difference between the two. One is a metal, the other an oxide. One is black and the other white.

The presence of arsenious acid is detected by chemists with various substances.

If slips of copper be boiled in Hydrochloric acid mixed with the solution we wish to test, the arsenic, if any, will be deposited upon the copper, as an iron gray crust.

Mixed with Ammonia sulphate of copper it will give a green precipitate, the *arsenite of copper*, if arsenious acid be present.

Mixed with Ammonia nitrate of silver, if the arsenious acid be present, it will yield a canary yellow precipitate—the *arsenite of silver*.

Mixed with sulphurated hydrogen, combined with muriatic acid, if the solution contains arsenious acid, it will yield a yellow precipitate—the *sesquisulphuret of arsenic*.

In cases of poisoning by this substance the contents of the stomach are examined closely to detect white granules or specks which may be arsenious acid. To remove all animal matter, the remainder of the contents are boiled in water and strained. By mixing nitric acid with the solution and adding nitrate of silver, much of the animal matter may be removed. A solution of common salt will precipitate the excess of silver salt, and the liquor being filtered is ready for one of the foregoing tests.

In medicine, arsenious acid has been used as a remedy for a great variety of diseases. Scirrhus and cancer, especially cancer of the lips, ulcers, intermittent fever, chronic rheumatism, frontal neuralgia, &c. It is sometimes administered in wine. The dose being at first small and then gradually increased. Nausea is produced, sometimes vomiting. Snake bite has also been treated with arsenious acid, in the form of Fowler's solution. It is the chief ingredient in nearly all empirical remedies for the cure of cancer by external application.

In an overdose internally it acts with great energy, destroying life in a short time. No well marked symptoms are developed until eight or nine hours after the poison has been taken. The symptoms are a fetid state of the mouth, continual hawking, sensation of teeth being on edge, hickup, anxiety, burning pain in the præcordia, inflammation of the lips, tongue, palate, bronchi and œsophagus, and irritable stomach.

Magnesia has been used successfully as an antidote.

The poison must be dislodged at first by free vomiting, by means of the finger or a quill and the administration of an emetic of sulphate of zinc, or by using the stomach pump. White of eggs should also be swallowed to envelop the poison. The antidote of Hydrated sesquioxide (peroxide) of iron in the moist state may then be given. Tablespoonful to an adult. Dessertspoonful to a child, every five or ten minutes until the symptoms are relieved. This antidote was discovered by Drs. Bunsen and Berthold, of Gottingen in 1834.

The external application of arsenious acid is attended with a great deal of danger as death has occurred in numerous instances.

It is one of the most useful as well as dangerous substances in the hands of the dentist. The greatest care therefore should be exercised in its use, and dentists should beware of allowing their patients, especially the more ignorant class, to know what they are using. We were in a drug store at one time when a little urchin came in and asked for three cents worth of creasote and arsenic. "What do you want with it?" inquired the druggist. "Mother wants it for the toothache!" said the little fellow. "Go home and tell your mother to go to the dentist" was the sensible reply of the apothecary. The danger of answering the inquiry "What do you use?" will be from this incident very evident.

We use it in connection with creasote for destroying the nerve. A piece of cotton about the size of two pin's heads is slightly wet with the latter substance, and allowed to come in contact with powdered arsenious acid; a sufficient quantity will adhere to answer the purpose. This is placed against the exposed pulp if possible, and allowed to remain for five or six hours. The following mixture is also used

R.—Acid Arsenious, ℞. ij.

Morphia Sulph. ℞. j.

These ingredients are rubbed in a wedgewood mortar with creasote, until the mass is thoroughly incorporated, forming a compound of the consistency of cream. This is applied on a small piece of cotton and allowed to remain in the cavity about twenty-four hours.

A. T.

OSTEOPLASTIC FILLINGS.

DR. L. P. CRANE, NEW YORK.

In the February number of the *Dental Cosmos* for 1859, will be found my observations on the success attending my operations with the Osteoplastic filling, for a period of about six months; and the sentiments therein expressed, I can only say have been fully realized after the test of over four years experience in its use, by constant watching and recording every case in a book, which I then adopted for that purpose. Now in regard to its durability I must admit, that there are instances where it has not fully realized my expectations; but then I have always observed that those instances were where the flow of saliva was unusually great, and almost wholly in the caries of inferior molars and bicuspid, in a few instances also in that of the superior teeth. So far as I have been able to trace, the apparent wearing away on the surface, or undermining at the base, has been the result of the action of saliva upon the filling before it was sufficiently hardened—in fact has prevented it from ever becoming a perfect solid. These instances are the exceptions; as a general thing, the durability of the osteoplastic fillings that I have inserted is beyond my most sanguine expectations. If the cavity be properly prepared and kept perfectly dry, the materials properly mixed, the right consistency and the exact time for inserting rigidly observed, the filling kept entirely free from saliva or moisture of any kind, for three or four minutes or until it has become sufficiently hard, my belief is, and the test of four years experience confirms that belief, that the process of mastication can never wear it away; nor will the action of the acids and juices and various deleterious substances taken into the mouth, (a portion of which are often allowed through the culpable carelessness or laziness of the patient to remain around the necks of and between the teeth until it has become a mass of decayed putrefaction) any sooner decompose it, than such action will decompose sound, healthy bone or enamel.

I have in my office the written testimony of several thousand patients, and those of our best citizens too, embracing every profession and pursuit; among which are the names of every chemist and physician of any celebrity in our city, all of whom have tried the filling for periods varying from a few months to six years, and testify to its virtue. This tends to show at least one thing, to wit: notwithstanding occasional imperfection in the operations, and apparent deoxydation of the surface, a perfect satisfaction on the part of the patient; which I take as a great desideratum to the dentist and a tolerably positive proof of the practicability of the material used, if not indeed of the efficiency of his work in all cases. Please do not understand me in the above remarks as wishing to boast of any success; on the contrary I have not the slightest pride in the matter, but I thought it might be well to have the opinion, on the subject, of men not in the profession, who are possessed, notwithstanding, of practical sense enough to appreciate the subject.

Now in regard to my idea of the best method of filling with the osteoplastic. A novice would be very apt to make a mistake in following strictly the directions for using it as given by Dr. Pearson; it should not be mixed so as to form a very "*stiff paste*"; on the contrary I find the filling far more durable and satisfactory, if the material be inserted in as soft a state, as will hold together and still be in a plastic form. The cavity should be prepared the same as for any other filling, with this exception, to wit: it is not necessary to give it any particular shape, by cutting away the sound, healthy bone, or by forming anchorages, the adhesive principle of the filling precluding that necessity; the most open or saucer shaped cavities retaining it almost equally as well. Of course all decay and soft bone should be carefully removed, then the cavity thoroughly dried and kept dry by using freely prepared cotton or spunk. I have always used the former. I then have the patient rinse the mouth thoroughly (several times if the saliva is inclined to be troublesome) with some pleasant astringent wash, such as cinnamon water, with a little alum or lime juice in it. I prepare the filling carefully, mixing as thoroughly and carefully as possible, leaving it in the state of a

soft paste and insert it at once. I fill first the nerve cavity and sides and gradually the centre, until it is completely filled, using occasionally a small plugger ; in this way I prevent the confinement of air and allow it to dry and harden as much as possible during the process of filling. When the cavity is full I immediately cover it over with plenty of prepared cotton or bibulous paper and keep it covered for three or four minutes, or until it is sufficiently hard. I then remove the cotton, have the mouth rinsed, and proceed to shape it by cutting away, with any suitable sharp-pointed instrument, any superfluous filling from the edges and surface, until it is brought to the desired shape and size. I then polish with a small burnisher. I always warn the patient against using the filling too severely for a few hours. The reason I do not *shape* the filling at first, or while inserting it, is to obviate any imperfection that might arise from the fundamental chemical law, that any soft or liquid substance in the process of becoming a solid must contract ; and as the adhesive power of the osteoplastic is sufficient to prevent a separation from the walls of the cavity, of course the shrinkage must necessarily be from the surface ; but as the shrinkage cannot amount to much, I merely give the filling a slightly greater convexity than desired, until it is ready for the final shaping. I am more particular in this matter with the fillings on the exterior surface and in all cavities that will show in the front teeth.

In regard to the kind of cavities that I treat with this material, let me say that I make no distinction ; if a patient prefers gold, I fill with gold ; if osteoplastic, I use that. These, however, are the only materials that I do use ; for I consider, after having used the osteoplastic so long with so much success, that tin and amalgam are mere trash, and have discarded them entirely. If there is a shadow of a tooth left, and that comparatively sound, I build upon it and reform as much of a tooth as the circumstances will allow. If one side of a tooth is left after removing the decay, with the filling I put the other side to it, making it as nearly the original shape as possible. If it is desirable to retain mere roots for purposes of mastication or for preserving the contour of the face, and they are in a tolerable state of preserva-

tion, I remove the decay and fill them up, making as near the semblance of a tooth as I can.

With this filling there is no after-pain arising from a too great pressure upon the nerve, or upon the sensitive dentine ; and as it is a non-conductor of heat and cold and of the galvanic current, it is pleasanter for acute nervous temperaments than metallic fillings. It requires no pressure in packing, therefore the most sensitive tooth can be filled with little or no pain to the patient.

I believe the above will cover in a cursory manner my experience with the osteoplastic. Anything that I have omitted, or not touched upon with sufficient plainness, or if my judgment appears warped by my own success with the filling, I shall be happy to be corrected, and to answer any questions that may arise, in a future communication.

[The above communication from Dr. Crane, was written at our request. Dr. Crane has, perhaps, used this filling more than any other of the profession, and being a member of reputation, we have much reason to place confidence in what he says. It appears that the success of the osteoplastic depends upon the manner of manipulating ; it requires a very quick hand, and as much dexterity in its introduction as gold. In certain cases it is superior to gold and possesses an advantage over the latter in its approximation to the color of the teeth. It adheres firmly to the bone, and is not liable to come out of cavities which will not retain metal fillings. Too much confidence however, should not be placed on its adhesive qualities, and where is it possible, the cavity shaped the same as for gold filling. We have been most successful in those cases where the filling was introduced just before it began to assume the crumbling state.

We have seen cases of this filling which for three or six months, and sometimes for a longer period, appeared to give entire satisfaction, when suddenly from some unknown cause, they began to wash, or wear away. This may have been caused from improperly mixing it, or mucous, or saliva touching it before completely hardening, although we have been very particular in keeping dry cotton in contact for about five minutes.

Our experience with it, however, has been confined almost wholly to front teeth, the superior chiefly, and there in an advanced state of decay. Some of these fillings have been in for a period of three years or more, and with many we have felt entirely satisfied after that length of time. When we can introduce gold, other things considered equal, we always plug with it; but cases often occur where we cannot, and in these instances we feel that we are much indebted to the introducers of artificial bone filling. We trust that Dr. Crane's article will be instructive and interesting to our readers. We thank him for the prompt and cheerful manner in which he complied with our request.

A. T.]

PERMANENT AND TEMPORARY SETS.

Those who advocate the use of temporary sets assign two reasons. First, the gratification of the patient; and second, to retain a more perfect preservation of the expression and rounded outline of the mouth and face. My custom is—and an experience of nearly twenty years in the practice of dentistry satisfies me of its being founded on good sense and propriety—to urge upon my patients to submit to the passing inconvenience of being without a temporary set; because a plate thrust into the mouth over unhealed gums, prevents healing and causes the gums to keep in a soft, unhealthy, spongy condition, utterly unfit for a base for a permanent set. I may add that I uniformly insist that my patients get their gums in as hard and healthy a state as possible, by washing, time, cleanliness, &c., before the adaptation of the permanent set.

I admit that the structural change in the mouth is greater the first six months, when temporary sets are not applied, but after that period there is far less change in the facial angles, and both operator and patient are vastly the gainers by the placing of a permanent set on a sound and well matured, consistent base.

G. W.

BUTTER OF ZINC.

About seventeen years ago I began searching for an escharotic—one that would destroy the nerve and pulp of aching teeth without subjecting my patients (many of whom were ladies and children) to the almost unbearable pains of my instruments. My preceptor, who had never used it, called my attention to the substance known as Chloride of Zinc, or as it is commonly called by pharmacutists, the Butter of Zinc. Upon referring to my Dispensary, I found the *modus preparandi* thus described:—"It is formed by adding oxide of zinc to pure muriatic acid by the aid of gentle heat, until no more can be dissolved. We then evaporate the solution to dryness, rub it to powder, and keep it in a close stopped vessel. In the air it is very deliquescent." This is the "Butter of Zinc."

At this time, as it is now, the common complaint of my patients was, "Oh, I can't bear to have my teeth cut and cleaned out; it is so painful!" Upon our first application of this escharotic we found it gave less pain to the patient than cutting and cleaning with instruments, and we have found such great advantage resulting to us and to our patients, in so many instances, that we have used it almost every week for many years.

Our *modus operandi* is this. When we find an over sensitive and much decayed tooth, we take a pledget of cotton, and after steeping it in a solution of the Chloride of Zinc, force into the cavities enough of the pledget to fill them tightly. The sensation to the patient is one of agreeable warmth and pungency. Allow the pledget to remain in the cavity—say an hour—until all feeling is destroyed and then the tooth can be cleaned without pain. We have in this way saved thousands of teeth which seemed beyond any remedy. Some dentists mix the Chloride with flour, others with Sulph. Morph., &c., &c.

We have found in our extensive practice that the best method is to apply the chloride as *concentrated as possible*. Sometimes I drop a small crystal of the escharotic into the nerve and let it remain till it becomes deliquescent, when in nine cases

out of ten we can proceed to clean the tooth with little or no pain. In cases of extreme sensitiveness we find the benefit of leaving the pledget of cotton saturated with the solution of zinc in the cavity for a day before we commence to clean and plug.
S. J.

REPORT OF THE PROCEEDINGS

OF THE
NINTH ANNUAL SESSION OF THE AMERICAN DENTAL CONVENTION,
HELD AT SARATOGA SPRINGS.

SARATOGA SPRINGS, AUG. 5, 1863.

The ninth annual session of this association commenced yesterday pursuant to adjournment at White's Hotel in this place. In the absence of the President, the meeting was called to order at 11 o'clock, by Dr. W. B. Roberts, of New York city, Corresponding Secretary. On motion Dr. Roberts was appointed President pro tem. As the first business of the Convention, the members proceeded to sign the constitution and pay the annual fee, one dollar each. The Recording Secretary read the Constitution, and the minutes of the last meeting. On motion the minutes were approved and adopted.

A letter was received from Dr. Amos Westcott, of Syracuse, the retiring President, which on motion was laid over to be read in place of the retiring President's address in the proper order of business.

The report of the Treasurer of the Convention was now read, announcing a balance remaining in the treasury, of sixty-two dollars and sixty-nine cents.. On motion the following gentlemen were appointed an auditing committee: Drs. Whitney, Rogers and Foster, who retired, and on the examination of the accounts, pronounced them correct, and the report was, on motion, accepted by the Convention.

On motion, Mr. Frank H. Norton, of New York city, was appointed to report the proceedings of the convention for the SARATOGIAN. On motion the hours of session were appointed from 9 A. M. to 1½ P. M., and from 4 to 6½ P. M. Proceeded to election of officers, Drs. Buckingham, of Philadelphia, and Kingsley, of New York city, being appointed tellers. The following gentlemen were then elected officers of the Convention for the coming year:

President—Dr. J. Taft, Cincinnati, Ohio.

Vice President—Dr. W. W. Sheffield, New London, Conn.

Corresponding Secretary—Dr. W. H. Atkinson, N. York city.

Recording Secretary—Dr. C. N. Pierce, Philadelphia, Pa.

Treasurer—Dr. A. C. Hawes, New York city.

The Convention then adjourned to meet at 4 o'clock, P. M.

Afternoon Session.

AUGUST 4, 1863.

The Convention came to order at 4 o'clock. The President *pro tem.* proceeded to read the communication from the retiring President, Dr. Westcott, which was listened to with great attention. In consideration of the illness of the President elect, and the absence of the Vice President elect, it was resolved that Dr. Roberts should continue to officiate as President *pro tem.* The Corresponding Secretary, Recording Secretary and Treasurer elect, now took their seats. The first subject for discussion, the "Causes influencing an abnormal development of the teeth," was now taken up. Dr. E. W. Sylvester, of Lyons, N. Y., read an interesting paper tending to show the influence of parents upon their children in causing such conditions—was followed by Drs. Atkinson and Hawes, of New York, and Dr. Buckingham, of Phila., and Dr. Searle, of Springfield. The weight of evidence fell in favor of the chief cause of abnormal development being unhealthy culture and improper conditions in the parents. Dr. Watt, of Xenia, Ohio, spoke very strongly in support of this position, and gave some interesting cases to illustrate it. The subject was continued by Drs. Whitney, Ellis, Williams, Pierce, and others. The chief fact elucidated during this discussion was the important influence of phosphate of lime upon the mother, and through her upon the child, as evinced in producing a regular healthy dentition.

Dr. Ellis referred to the influencing of inhaling air through the mouth instead of through its proper channel, the nose, as being in the highest degree dangerous and injurious.

On motion, the discussion of the first subject being concluded, adjourned until 9 A. M. on Wednesday, August 5th.

SECOND DAY'S PROCEEDINGS.

Morning Session.

WEDNESDAY, AUG. 5, 1863.

The Convention came to order at 9 o'clock; the President *pro tem.*, Dr. W. B. Roberts, introduced the Vice-President elect, Dr. Sheffield, to the Chair.

The following resolution was moved by Dr. Roberts, and adopted by the Convention:

Resolved, That the Chair appoint a Committee of five, to make proper arrangements for observing the day of Thanksgiving appointed by the President of the United States.

The following gentlemen were appointed such Committee:

Drs. W. B. Roberts, Rogers, Kingsley, of New York, Watt, of Xenia, and Atkinson, of New York.

The Committee on the introduction of Dentists into the Medical Department of the United States Army, reported progress. On motion, the Committee was discharged, and a new Committee appointed by the Chair, consisting of the following gentlemen: T. L. Buckingham, Philadelphia, G. Watt, Ohio, B. T. Whitney, Buffalo.

The second subject for discussion was now taken up: "Treatment of dental irregularities, and appliances for the same."

Dr. Norman W. Kingsley, of New York, spoke at length on this subject, illustrating his remarks by diagrams on the black-board. The discussion was in reference to the irregular appearance of teeth; they being out of line in the arch, and having to be drawn into the proper position by mechanical means. Dr. Kingsley used India rubber ligatures, attached to a wire passing round the surface of the jaw and attached to the regular teeth; was followed by Drs. Roberts, Palmer, Foster, Eccleston, Ellis, Woolworth, Watt, Goldey, and others. Various appliances were suggested in place of rubber ligatures, and the subject was thoroughly discussed, and the remarks listened to with great interest and attention by all present.

At about noon, the President elect, Dr. Taft, of Cincinnati, entered the hall. Dr. Taft has been confined to his room by serious illness since the organization of the Convention, and on his entrance, was received with applause. The Chair appointed Drs. Watt and Hawes a Committee to conduct the President to his seat. On taking his seat, Dr. Taft spoke a few words, thanking the Convention for their unexpected honor.

The Committee appointed to report arrangements for observing the day of Thanksgiving appointed by the President, reported "that the first hour of the Convention be devoted to religious services appropriate to the day, and that the business of the Convention be then continued as usual."

Report accepted and resolution adopted.

On motion, proceeded with the third subject for discussion: "Filling teeth. Filling temporary teeth. Best material for same."

This subject was opened by Dr. Rogers, who spoke in favor of tin, considered only as a preservative agent. Dr. Smith, of Syracuse, gave an instance in which tin filling remained in the mouth for thirty-four years, perfectly preserving the tooth. Dr. Hawes objected to tin filling as being very injurious to the teeth, and recorded his opinion in favor of gold. He was followed by Dr. Atkinson, of New York, who spoke at length on the importance of the subject. He considered gold decidedly

the best material for filling teeth, and the mallet the best agent for filling them. Dr. Atkinson was questioned very closely, and his remarks were listened to with great attention.

Adjourned.

Afternoon Session.

SARATOGA SPRINGS, AUG. 5, 1863.

The Convention was called to order at 4 o'clock, the Vice-President in the Chair. In continuation of the subject under discussion in the morning, Dr. Wood read a paper upon "the use of fusible metal for filling teeth."

The Convention then proceeded to discuss the question as to a place for the next annual meeting of the Convention. Considerable discussion ensued, and finally the question was decided in favor of Philadelphia. Dr. Wood proceeded, by permission, to exhibit his method of manipulating fusible metal, and the instrument used in this manipulation.

The question of fusible metal was then discussed by Drs. Buckingham, Goldey, Hawes, Wood, Rogers, Roberts, Atkinson, Perkins, of Albany, Butler, Palmer, and others. Dr. C. Palmer, of Warren, Ohio, and Dr. Atkinson, of New York, proceeded to exhibit various instruments of their manufacture, after which the Convention adjourned.

THIRD DAY'S PROCEEDINGS.

Morning Session.

THURSDAY, AUG. 6, 1863.

The meeting was called to order at 9½ o'clock by the President.

Carrying out the resolution passed on Wednesday, the President announced that the first hour of meeting would be devoted to exercises appropriate to the day of Thanksgiving appointed by the President for Thursday, August 6th.

After a few remarks from the President in reference to the appropriateness of such exercises, Dr. Watt read a selection from the Bible. He was followed by Rev. Mr. Anderson, from Brooklyn, in a very impressive prayer.

The President then announced that Professor Wood, being present, would lead in singing the hymn "America." Accordingly, assisted by Drs. Sheffield, Perkins and Rogers, and followed by the audience, this beautiful hymn was sung with much greater success than is common to such occasions.

After a short prayer by Dr. Sylvester, addresses were made by Drs. Rogers, Watt, Atkinson, and other dentists.

By request, the Rev. Mr. Anderson then addressed the Convention in beautiful and forcible words, on the reasons why we should give thanks at the present time, illustrating his remarks with all the wealth of rich imagery and a great flow of language. The services concluded by singing the doxology and by a benediction offered by the Rev. Mr. Anderson.

After which a recess was taken of twenty minutes.

The subject of the "Treatment of Cleft Palate" was now taken up by Dr. Atkinson, who spoke upon the causes of the condition, and the importance and utility of surgical operation as the remedy. He was followed by Dr. Kingsley, who, by request, occupied the remainder of the morning session in making a statement describing his method of treating cleft palate, and illustrated by models and diagrams his apparatus. This was decidedly the feature of the Convention—combining in his novel application the greatest originality and fertility in all its details. Dr. Kingsley has entitled himself to be placed in the very first class of scientific inventors. The presentation of this subject by Dr. Kingsley was received with the greatest delight by the audience, and was accompanied by frequent applause.

On motion of Dr. Hawes, the following resolution was adopted by the Convention :

Resolved, That a vote of thanks be tendered to Dr. Kingsley for the very valuable and interesting description of his method of treating cleft palate, and that to him is due the honor of first making a perfectly practical artificial velum.

Adjourned.

Afternoon Session.

SARATOGA SPRINGS, AUG. 6, 1863.

The Convention was called to order at 4 o'clock by the President. On motion, the subject of the "Treatment of Cleft Palate" was closed.

On motion of Dr. Atkinson, Dr. Palmer, of Warren, Ohio, proceeded to explain his instruments for the preparation of the nerve cavity for filling, illustrating with diagrams on the black-board.

The Convention now went into the discussion of "Diseases of the Antrum, and Treatment."

The subject was opened by Dr. Atkinson, who was followed by Drs. Newton, Eccleston, Palmer, of Fitchburg, Mass., Kingsley, of Elizabeth, Hill, of Brooklyn, and others.

On motion, the order of business was now suspended, while the Convention took up the subject of "Nitrous Oxide Gas."

Dr. Allen considered this the best anæsthetic agent he had ever used ; he described the nature of its action ; it usually oc-

cupied about one minute and a half before producing anæsthesia, and about the same time before the effect passed away. Dr. Allen did not approve of using any anæsthetic, but considered nitrous oxide the best.

Dr. Searle described his method of manufacturing the gas, illustrating his remarks on the blackboard.

He was followed by Drs. S. S. White, Buckingham, Watt, Atkinson, Hill, and others.

On motion of Dr. W. B. Roberts, and supported by remarks in their favor from Dr. Dwinelle, the following preamble and resolutions were unanimously adopted :

Whereas, This Association, having for its object the elevation and advancement of our science, desire on all occasions to recognize, endorse, and to give encouragement to those of our number who contribute most largely to the progress and perfection of our noble art ;

And whereas, Dr. Norman W. Kingsley has this day presented and demonstrated to this Convention his peculiar method of restoring artificially the lost palate and velum, in a manner so clear and comprehensive as to entitle him to a substantial testimonial from this Convention. Therefore,

Resolved, That this Convention present to Dr. Kingsley a gold medal, as an expression of their high appreciation of this valuable contribution to our profession.

Resolved, That a committee of five be appointed by the Chair to carry out the object of this resolution, with power to draw upon the Treasurer for that purpose, for an amount not exceeding fifty dollars.

Adjourned.

FOURTH DAY'S PROCEEDINGS.

Morning Session.

AUGUST 7, 1863.

The Convention was called to order by the President at 9 o'clock, A.M. The Secretary read the minutes of the previous day, which were adopted.

The subject of "Alveolar Abscess" was now taken up.

Dr. Atkinson announced the principles which governed the nature of this disease, and was followed by Dr. Dwinelle, who spoke at length on the subject ; thought the disease of less importance than was commonly considered.

Dr. W. B. Roberts continued the subject, and was followed by remarks by Drs. Buckingham, Dwinelle, Atkinson and Hawes.

The President substituted the name of Dr. S. S. White, of

Philadelphia, for that of Dr. Buckingham, on the committee on the appointment of dentists in the army, to co-operate with the committee from the American Dental Association.

On motion, the Convention proceeded to the discussion of the subject of "Mechanical Dentistry."

Considerable discussion now ensued concerning the value of vulcanized rubber as a base for artificial dentures.

Drs. Dwinelle, Hill, and others, referred to the production of inflammation under its influence as resulting from its being a non-conductor of heat.

Dr. Perkins took occasion to reflect in the severest terms on the practice of using this material, as injurious to the wearer and a disgrace to the profession. His remarks were received by the Convention with loud applause.

Drs. Hawes, Whitney and Butler were not so strongly opposed to the use of vulcanized rubber.

After some discussion in reference to the use of air chambers between Drs. Dwinelle, Whitney, Goldey, and others, Dr. W. B. Roberts spoke on the question of the use of vulcanized rubber. Dr. R. spoke at length, and his remarks were listened to with great interest and received with applause; he opposed the use of rubber in all cases, as being a deleterious and dangerous substance, and encouraging the debasement of the profession. He spoke in the highest terms of continuous gum, which he considered decidedly the best base for artificial teeth.

Dr. John Allen, of New York, the inventor of the continuous gum work, spoke at length in regard to his invention, describing it, and referring to the past history of the manufacture of artificial dentures. Dr. Allen illustrated his remarks by exhibiting a full set, which he took from his own mouth, and which beautifully illustrated its capacity for restoring the fullness and natural expression of the face.

Dr. Allen was followed by Dr. Shepherd, who explained his new style of Callipers. Dr. Palmer, of Warren, Ohio, made some remarks on articulation and restoring the contour of the face by artificial denture.

Dr. E. A. L. Roberts, of New York, proceeded to describe his improvements in vulcanizers, and gave a short history of the progress of their manufacture, showing the wonderful improvement that had been made.

He was followed by Drs. Goldey, Kingsley, and others, on artificial dentures restoring the contour of the face.

Dr. Whitney gave his composition for filling in base-plates of white wax and turpentine, followed by Dr. Williams, Dr. Shepard, and others.

On motion, the Convention suspended the rules of order and

proceeded to reconsider the vote appointing Philadelphia as the next place of meeting. The Convention proceeded to vote on a place of meeting, when Detroit was selected.

On motion, resolved to adjourn at half-past 2 o'clock, P.M., until the next annual meeting.

Proceeded to miscellaneous business, and Dr. Atkinson read a paper.

The President announced as the Committee on the Kingsley Medal: Drs. W. B. Roberts, A. C. Hawes, Jno. Allen, W. H. Atkinson, W. H. Dwinelle.

The President made some remarks, regretting that disability had prevented him from speaking to the Convention on several topics that had been presented. He spoke at length on the necessity of educating the people to a knowledge of dentistry; believed in popular dental education, both for the patient and for the operator. It matters not how efficient the operator may be if he be not supported by the confidence of an educated patient.

The President continued to speak upon this topic for some time, and his remarks were listened to with attention and satisfaction by those present.

Adjourned to meet on the first Tuesday in August, 1864.

List of Names of Members Present.

Dr. B. T. Whitney,	Buffalo, New York.
" L. W. Rogers,	Utica, "
" Thomas D. Evans,	" "
" A. C. Hawes,	New York City.
" W. H. Atkinson,	" "
" A. T. Smith,	Syracuse, New York.
" William C. Parks,	Williamsburgh, "
" J. H. Smith,	New York City.
" T. Palmer,	Fitchburg, Massachusetts.
" C. R. Butter,	Cleveland, Ohio.
" D. S. Goldey,	Oswego, New York.
" J. B. Williams,	Monongahela City, Pennsylv'a.
" S. B. Palmer,	Tully, New York.
" W. W. Sheffield,	New London, Connecticut.
" S. Mapes,	Fishkill Landing, New York.
" E. M. Skinner,	Syracuse, "
" H. H. Newton,	St. Johnsbury, Vermont.
" J. Fiske,	Clinton, Massachusetts.
" C. B. Foster,	Utica, New York.
" G. Watt,	Xenia, Ohio.
" W. L. Bowdoin,	Salem, Massachusetts.

Dr. J. L. Clark,	Waterloo, New York.
" S. L. Smith,	Ballston Spa, "
" C. H. Eccleston,	Utica, "
" A. N. Priest,	Albany, "
" J. A. Perkins,	" "
" O. F. Harris,	Worcester, Massachusetts.
" J. F. Scranton,	Bennington, Vermont.
" W. W. Perkins,	Baldwinsville, New York.
" J. G. Barber,	Le Roy, "
" H. Kingsley,	Middlebury, Vermont.
" T. L. Buckingham,	Philadelphia, Pennsylvania.
" A. W. Kingsley,	Elizabeth, New Jersey.
" W. A. Bronson,	New York City.
" N. W. Kingsley,	" "
" E. W. Sylvester,	Lyons, New York.
" F. O. Hyatt,	Cortland, "
" F. N. Seabury,	Providence, Rhode Island.
" L. W. Bristol,	Lockport, New York.
" G. A. Young,	Concord, New Hampshire.
" E. G. Cummings,	" "
" C. N. Pierce,	Philadelphia, Pennsylvania.
" H. Townsend,	" "
" H. Faville,	Milwaukie, Wisconsin.
" A. M. Holmes,	Morrisville, New York.
" N. D. Ross,	Troy, "
" H. A. Smith,	Cincinnati, Ohio.
" C. Palmer,	Warren, "
" H. Benedict,	Detroit, Michigan.
" J. A. Watling,	Ypsilanti, "
" S. K. Thompson,	Poultney, Vermont.
" J. Woolworth,	New Haven Connecticut.
" S. D. Arnold,	Ballston Spa, New York.
" O. Lund,	Philadelphia, Pennsylvania.
" G. Chevalier,	New York City.
" E. Strong,	New Haven, Connecticut.
" C. L. Smith,	" "
" B. S. Burnham,	Fort Edward, New York.
" S. M. Robinson,	Watertown, "
" W. B. Roberts,	New York City.
Mr. F. H. Norton,	" "
Dr. R. M. Howard,	Knox Corners, New York.
" G. W. Ellis,	Philadelphia, Pennsylvania.
" A. Jones,	New York City.
" J. C. Robins,	Jersey City, New Jersey.
" T. S. Scranton,	Madison, Connecticut.
" F. Searle,	Springfield, Massachusetts.

Dr. H. F. Bishop,	Worcester, Massachusetts.
" George Howell,	Riverhead, Long Island.
" S. S. White,	Philadelphia, Pennsylvania.
" A. E. Lyman,	Newton Falls, Ohio.
" B. Wood,	Albany, New York.
" J. T. Metcalf,	New Haven, Connecticut.
" G. L. Cooke,	Milford, Massachusetts.
" E. V. N. Harwood,	Rutland, Vermont.
" J. P. Beardsley,	Clinton, New York.
" H. Jameson, Jr.,	Lyons, "
" G. B. Snow,	Buffalo, "
" A. Hill,	Norwalk, Connecticut.
" E. L. Fuller,	Peekskill, New York.
" T. G. Lewis,	Buffalo, "
" M. Tefft,	Cambridge, "
" J. A. Chase,	Genesee, "
" Wm. G. A. Bonwill,	Dover, Delaware.
" G. W. Keely,	Oxford, Ohio.
" E. A. L. Roberts,	New York City.
" S. D. French,	Troy, New York.
" L. C. Wheeler,	" "
" S. J. Andres,	" "
" L. C. Shepard,	Amherst, Massachusetts.
" J. B. Snow,	Bridgeport, Connecticut.
" O. E. Hill,	Brooklyn, New York.
" W. H. Jones,	Northampton, Massachusetts.
" I. Taft,	Cincinnati, Ohio.
" J. Allen,	New York City.
" P. Harris,	Skaneateles, New York.
" J. A. Pelton,	Middletown, Connecticut.
" H. A. Coe,	Theresa, New York.
" W. H. Dwinelle,	New York.
" George W. Newton,	Worcester, Massachusetts.
" George S. Allan,	Newburgh, New York.
" H. M. Miller,	Westfield, Massachusetts.

Daily Saratogian.

WHILE the gastric juice has a mild, sweetish taste, it possesses the power of digesting the hardest food that can be swallowed. It has no influence whatever on the fibres of the living animal, but at the moment of death, it begins to eat them away with the power of the strongest acid.

It is stated that a surgeon in Australia is making his fortune by plugging teeth with gutta percha from gutta percha buckets. Here is a field for our young enterprising traveling dentists !

THE AMERICAN DENTAL ASSOCIATION.

The American Dental Association held its third annual meeting at the Assembly Building, in Philadelphia, commencing Tuesday, July 28th, and continued in session four days. There were two sessions each day—the morning session from nine o'clock till twelve, and the afternoon session from four till six o'clock. The first day was occupied chiefly in nominating and electing officers to serve for the ensuing year. The result was as follows:

President—Dr. W. H. Allen, of New York City.

First Vice-President—Dr. J. H. McQuillen, of Philadelphia.

Second Vice-President—Dr. Wm. B. Hurd, of Brooklyn, New York.

Recording Secretary—Dr. J. Taft, of Cincinnati, Ohio.

Corresponding Secretary—Dr. C. K. Butler, of Cleveland, Ohio.

Treasurer—Dr. A. C. Hawes, of New York City.

The following Societies, with their delegates, were represented.

Michigan State Dental Association—Drs. Grimes and Metcalf, of Kalamazoo; Dr. H. H. Jackson, of Farmington.

Brooklyn Dental Association—Drs. Hurd, Wheeler, Parks, Mills, of Brooklyn, New York; Drs. A. C. Hawes and A. W. Allen, New York City, and Dr. J. H. Smith, New Haven, Connecticut.

New York Society of Dental Surgeons—Drs. Chas. E. Francis and T. Burgh, of New York City.

Pittsburg Dental Association of Western Pennsylvania—Drs. Sill and Williams, of Pittsburg, Pennsylvania.

Western Dental Society—Dr. C. W. Spaulding, St. Louis, Missouri.

Central New York Dental Association—Drs. Martin and Skinner, Syracuse, New York; Dr. Palmer, Tully, New York; Dr. Harris, Skaneateles, New York.

Northern Ohio Dental Association—Dr. Whitney, Salem, Ohio; Dr. Butler, Cleveland, Ohio; and Dr. Lyman, Newton Falls, Ohio.

Cincinnati Dental Association—Drs. S. Wardle and J. G. Cameron, Cincinnati, Ohio.

Odontographic Society of Pennsylvania—Drs. Gilliams, Kingsbury, Tees and Gorges, of Philadelphia; Dr. McCalla, of Lancaster; Dr. Brenizer, of Reading.

Pennsylvania Association of Dental Surgeons—Drs. Buckingham and Peirce, of Philadelphia; Dr. Hayhurst, of Lambertville, New Jersey, and Dr. Moore, of Pottstown, Penna.

Pennsylvania College of Dental Surgery—Dr. E. Wildman, of Philadelphia.

Philadelphia Dental College—Dr. T. Wardle, Philadelphia.

Mississippi Valley Association—Dr. McClelland, Louisville, Kentucky.

The permanent members present were: Drs. McQuillen, Atkinson, Watt, Gildea, Flagg, Fitch, Dillingham, W. H. Allen, C. Palmer, Taft, Barker, H. A. Smith, and Ellis.

Dr. Watt, the retiring President, made a few happy remarks on retiring.

Dr. Atkinson presented and read the report of the Committee on Dental Physiology. This paper excited much interest, and was discussed at some length by Drs. Watt, Taft, McQuillen, Spalding, Flagg, Fitch, Butler, Hawes, Hurd, Buckingham, Kingsbury, Lyman and Sill. The peculiar sensation denominated *tooth-edge*, received a share of attention; some of the members ascribed it to sensitiveness of the dentine, perverted nutrition, and others to other causes.

The report of the Committee on Dental Pathology and Surgery was presented by Dr. Atkinson. The reproduction of bone was advanced as a new process. Successful cases were mentioned where bone had been reproduced over denuded teeth. The diseased structure is first removed, a pocket obtained for the retention of the plasma, and a solution of iodine in creasote is applied. The subject absorbed the attention of the association during nearly the whole of one session, Dr. Atkinson describing the process very minutely. It was discussed by several of the members, who cited instances where they had been successful. Alveolar abscess also received a due share of attention. Dr. Taft gave the history of a case, where a gentleman twenty-three or twenty-four years of age was much reduced by repeated attacks of fever and ague; there was a large continuous abscess extending over the four superior incisors; tonic remedies were exhibited and the necrosed bone removed. Tannin, creasote, glycerine and iodine were applied, and although the treatment extended over a space of three months, the firm retention of the teeth by the reproduction of bone, entirely down to their necks, fully compensated for its tardiness.

The report of the Committee on Dental Literature was read by Dr. J. H. McQuillen. It reviewed the various American works on dental subjects, gave flattering notices of the various dental journals, and directed attention to the importance of associated effort among members of the dental profession.

The report of the Committee on Dental Education was read by Dr. Ellis. It referred to the advanced condition of dental science, and the consequent necessity of a more thorough system

of imparting instruction. The teachings in the dental colleges were believed to constitute, combined with private instruction, the most desirable system of dental education. Other papers on this subject were read by Drs. Flagg and Latimer.

An interesting and instructive paper, and one which demanded more attention than it received, was read by Dr. Ellis; subject, "The Extraction of Teeth.

The peculiarities of the several instruments employed, the skill of the operator, method of employing the forceps, and the treatment of the mouth after extraction, were subjects severally considered. Several pair of forceps were exhibited.

Dr. W. H. Allen read a paper upon "Irregularity," describing the various forms and specifying the treatment.

A paper from Dr. Hawes, on "Exposed pulps and Alveolar Abscess" was read by Dr. Flagg. When a pulp is exposed, he advocates a prompt destruction and entire removal. Attempts for its preservation after exposure, he thought, would only meet with failure; success being the exception, rather than the rule.

The following resolution was offered by Dr. McQuillen:

Resolved, That a committee of five be appointed by this Association to confer with Surgeon General Hammond, relative to the appointment of dentists to the military hospitals of the United States, and also to secure if possible prompt and successful action on the part of Congress, by having petitions prepared, signed, and sent to that body from all parts of the country in favor of the measure.

After much discussion, it was adopted. On motion, which was carried, the chair appointed the following committee: Drs. J. H. McQuillen, C. W. Spalding, J. Taft, C. P. Fitch, and H. N. Wadsworth.

Dr. Palmer, of Cleveland, Ohio, exhibited a beautiful set of excavators. They were more especially designed to excavate cavities where the nerve is to be extirpated and the fang filled. They were manufactured by himself under magnifying glasses. We do not remember having seen a finer set of instruments. Dr. Palmer deserves much credit for his mechanical ingenuity, a quality so necessary to make a good dentist. The steel used was of the most valuable and difficult to procure. Dr. Butler, of Cleveland, promised to furnish the Association with the composition of the materials which he used for tempering steel. He employed two materials, a semi-solid and a liquid which he called "do-good" and "dog water."

The President expressed his pride and satisfaction at the manner in which the present session had been conducted, and should anticipate with pleasure a general re-union at Niagara Falls, on the last Tuesday of July, 1864.


THE ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

This Society was organized on Tuesday evening, May 19th, 1863. The following are the officers elected to serve for the ensuing year:—*President*, Dr. Jacob Gilliams; *Vice President*, Dr. C. A. Kingsbury; *Recording Secretary*, Dr. Louis Lusson; *Corresponding Secretary*, Dr. J. H. McQuillen. The meetings are held monthly on the first Tuesday evening.

On Tuesday evening, July 7th, Dr. J. F. Flagg, according to appointment, read an interesting essay on *Orthodontia*. He contended that there can be no practice more contrary to all sound doctrines and more surely conducive to deplorable results, than that of extracting children's teeth for the purpose of "making room," or to relieve the toothache. He thought there were two conditions which demanded a prompt removal of the deciduous teeth. First—When the superior permanent centrals present themselves posteriorly to the deciduous centrals. Second—When inferior permanent centrals present themselves anteriorly to the deciduous centrals. He dwelt on the various modes of regulating teeth and presented models to illustrate his method. He had for several years abandoned the use of the inclined plane, and used instead combinations of wire, ligatures and gutta percha. He thought it was indispensable for the accomplishment of good results, that a dentist should have a knowledge of tying knots. Teeth are so shaped, so rounded, and so smooth, that ordinary tying will not avail much. This is only to be taught by demonstration, and acquired by repeated trial and some little experience. The essay was commented upon by Drs. Fitch, Wardle, Gorges, McQuillen and Kingsbury. The discussion was continued at an adjourned meeting on Monday evening, July 13.

The regular monthly meeting was held at the Philadelphia Dental College, Tenth street above Arch, on Tuesday evening, August 4th. Dr. S. R. Screven presented an essay on *Dental Caries*. He said that caries was a disorganization or decomposition of dental structure, originating in all cases from mechanical, chemical or physiological causes. Predisposing causes are met with in all teeth; some are, however, more predisposed than others—such for instance as those of a soft and delicate texture, where the disease is bold and rapid in its course. Exciting causes are met with externally; chiefly in the form of acids, which, penetrating the enamel, come in contact with the dentine; its effects are soon manifested by a decomposition of this tissue in the direction of the tubuli, destroying layer after layer of bone, until the pulp cavity is reached. During this

process the enamel may remain unbroken for a considerable length of time, and only indicating the disease by a dark brownish spot. This shell of bone may remain thus until some hard substance coming in contact with it, crushes the walls, leaving nothing but an unsightly ruin for the study of the dentist. Remarks upon this paper were made by Drs. Fitch, Flagg, McQuillen, Tees, Wardle, Sill and Lusson.

 We are pleased to see that the Ohio Dental College is still in successful operation. We hope that our Western friends will exert all the influence in their power, to induce a goodly number of students to matriculate this session. We wish it success.

NOTICES OF BOOKS, &c.

"*The Dental Times*" is the title of a new quarterly journal of dental science, edited and published by the Faculty of the Pennsylvania College of Dental Surgery. Terms, one dollar per year, in advance. The first number, which we understand was sent, or intended to be sent, to every dentist, contains a variety of reading matter of interest to the profession. Each professor contributes one or more articles. Contributions are solicited from the student, the worker, and the teacher. It will be issued on the first day of July, October, January and April.

"*Jenkins' Vest-pocket Lexicon*," an English dictionary of all, except familiar words, including the principal scientific and technical terms, is a book which should be in the pocket of every dentist. We have found it useful for reference, and there have been but very few words that we have looked for and not found in it. It omits what everybody knows, and contains what everybody wants to know. Its size and cheapness will render it a *dear* useful companion to all. Published by J. B. Lippincott & Co., Philadelphia. Price, 53 cents.

VARIETIES.

INVENTION FOR HARDENING IRON AND STEEL.—A new invention is announced, which consists in first heating the article to be hardened in a bath of lead or other molten metals, or in a retort, so as to be protected from the direct action of the fire. In applying to it, either in the bath or retort, or immediately on its withdrawal therefrom, the peculiar composition used, either in powder or fluid, in some cases the article is returned to the bath or retort after such application. The composition thus used is prepared by taking prussiate of potash, or other substance containing cyanogen or possessing like chemical properties, and reducing it to powder. Common salt and powdered nitre are then mixed with it, and the composition set fire to, the resulting ashes or substance remaining after the firing, being taken and reduced to powder. This powder liquifies under heat, and is used alone or mixed with charcoal.

CONSOLIDATED EMERY WHEELS.—The wheels known by this name are intended as a substitute for and an improvement on the ordinary leather emery wheel used for polishing iron work, more especially case hardened work. In an experiment with two kinds of wheels, one of which was a small disk composed of vulcanized India-rubber and emery, and the other composed of oxidized oil and emery, the latter was superior. Oxidized oil, therefore, a newly invented substance, bids fair to become of considerable value. In the present instance, there remains no doubt as to its utility. It is found that wheels composed of vulcanite and emery are equally effective for cutting, grinding and polishing iron or steel of any description. They are mounted on spindles, in the same manner as grindstones, or other grinding wheels, and are found both efficient and durable.

THE breath which leaves the lungs has been so perfectly divested of its life-giving properties, that to re-breathe it, unmixed with other air, the moment it escapes from the mouth, would cause immediate death by suffocation; while if it hovered about us a more or less influence on our health would be occasioned by it. But it is made of a nature so much lighter than common air, that the moment it escapes the lips and nostrils it ascends to higher regions above the breathing point, there to be rectified, renovated and sent back again, replete with purity and life. The rapidity with which it ascends is beautifully exhibited any frosty morning. Dentists can thus see the necessity of avoiding as much as possible the inhalation of the air exhaled by their patients. It would be well to hold the breath while necessary to look full in the mouth.

FORMULÆ FOR ALLOYING GOLD.—Multiply the quantity by its own Karat, and divide the product by the Karat required; and the difference between the quotient and quantity is the desired alloy.

Example—Take a \$20 piece, 516 grs. $\times 21.6 = 11,145.6 \div 180$, gives 619.2. Subtract the quantity 516 and we have 103.2—the alloy to be added.

This Formulæ applies to solders of all qualities.

FOREIGN DENTISTS.—We learn from the census of 1861 that in Dresden there are 18 dentists, in Berlin 46, in Madrid 22, and in Munich 14.

RECIPE FOR MAKING GOOD PLASTER MODELS.—Take half an ounce of strong solution of gum arabic; mix it with the water in which you put your plaster. It makes a very hard and useful cement.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eighth Annual Session, 1863-64.

FACULTY.

J. D. WHITE, D.D.S., Emeritus Professor.

T. L. BUCKINGHAM, D.D.S., Professor of Chemistry and Metallurgy.

C. N. PEIRCE, D.D.S., Professor of Dental Physiology and Operative Dentistry.

E. WILDMAN, D.D.S., Professor of Mechanical Dentistry.

G. T. BARKER, D.D.S., Professor of Principles of Dental Surgery and Therapeutics.

W. S. FORBES, D.D.S., Professor of Anatomy and Physiology.

JAMES TRUMAN, D.D.S., Demonstrator of Operative Dentistry.

E. N. BAILEY, D.D.S., Demonstrator of Mechanical Dentistry.

The regular course will commence on the first Monday of November, and continue until the first of March ensuing.

During October, the Laboratory will be open, and a Clinical Lecture delivered every Saturday, by one of the Professors, at 3 o'clock, P.M.

The most ample facilities are furnished for a thorough course of practical instruction.

Tickets for the Course, Demonstrators' Ticket included, \$100. Matriculation Fee, \$5. Diploma Fee, \$30.

For further information, address

C. N. PEIRCE, DEAN,
501 North Seventh Street, Philadelphia.

ADVERTISEMENTS.

PHILADELPHIA DENTAL COLLEGE.

First Annual Session, 1863-64.

FACULTY.

C. A. KINGSBURY, D.D.S., Professor of Dental Physiology and Operative Dentistry.

THOS. WARDLE, D.D.S., Professor of Mechanical Dentistry and Metallurgy.

J. H. McQUILLEN, D.D.S., Professor of Anatomy, Physiology and Hygiene.

J. FOSTER FLAGG, D.D.S., Professor of Institutes of Dentistry.

HENRY MORTON, A.M., Professor of Chemistry.

GEO. W. ELLIS, D.D.S., Demonstrator of Operative Dentistry.

WM. GORGES, D.D.S., Demonstrator of Mechanical Dentistry.

The Laboratory of the College will be open, and preliminary lectures will be delivered by one of the Professors every day during the month of October; the lecture on Wednesday of each week, at 3 o'clock P.M., to be devoted to *Clinical* teaching. The regular course of instruction will commence on the first Monday of November, and continue until the close of the ensuing February.

The lectures will be amply illustrated by the extensive and *valuable* collections of Anatomical, Pathological and Mineralogical specimens, and the Philosophical and Chemical apparatus of the incumbents of the various Chairs, and every opportunity will be afforded in the Clinic and Laboratory for obtaining a *practical* knowledge of Operative and Mechanical Dentistry.

F E E S .

Matriculation, paid but once,	\$5 00
Tickets for the Course, including the Demonstrators',	100 00
Diploma,	30 00

For further particulars, address J. H. McQUILLEN, DEAN,
July, 1863. 1112 Arch Street, Philadelphia.

DENTAL BOOKS.

Harris's Principles and Practice of Dental Surgery. Eighth edition, enlarged,	\$5 00
System of Dental Surgery. By John Tomes, F.R.S.,	3 50
Richardson's Practical Treatise on Mechanical Dentistry,	3 50
Taft's Practical Treatise on Operative Dentistry,	3 00
Bond's Practical Treatise on Dental Medicine,	3 00
Handy's Text Book of Anatomy,	3 00
Piggot's Dental Chemistry and Metallurgy,	3 00
Fox and Harris on the Human Teeth,	3 00

For sale by **JOHNSON & LUND.**

T H E

DENTAL QUARTERLY.

VOL. 2. PHILADELPHIA, DECEMBER, 1863. No. 4.

NATURAL PHILOSOPHY AND CHEMISTRY.

The necessity of a dentist being well acquainted with these sciences cannot be too strongly impressed upon the mind of the student, or even of the practitioner. Aside from the advantages derived from the every day demands upon them, there is also another of enabling us to be better fitted as contributors to the advancement of the profession, by having the power and knowledge requisite to carry out ideas engendered by accident or necessity. Thus, if there be certain laws, a knowledge of which may be of benefit in this respect, or certain substances useful and necessary for certain purposes, no one will be better able to place his hand upon them than he who is thoroughly conversant with these important branches.

The age is too enlightened to admit of the possibility for any among us to stand on the same platform as many antiquated farmers—who are fast passing away—such as are ever ready to wage war against the “Farmer’s Monthly,” or the Agricultural Society, persistently resisting everything of an intellectual character and clinging with tenacity to the habits and implements of their youthful days. They refuse to give place to the modern innovations of time and labor-saving character, dragging out a mere mechanical, brute-like existence, headwork being a matter of no consideration with them. Occupying, as dentistry does, a position among the learned professions, we trust that the time is past when even a single one known as a dentist can be found prejudiced against the education of the student on scientific and systematic principles.

The study of Natural Philosophy and Chemistry embraces the useful, the beautiful and the sublime; the finite and the infinite. It assists in explaining to us the various phenomena of the heavenly bodies, and of their influence upon earthy matter; elucidates the principle of the pressure of the atmosphere and the repulsion of its particles with the attendant effects; gravitation and the motion of matter; the mode of making mechanical forces of use; teaches us that matter is composed of atoms, themselves supposed to be indivisible with an interstitial space between each one, and the relation they bear to each other; it takes into consideration the properties and qualities of different kinds of matter and the action of light, heat and electricity upon them; renders plain the objects of respiration, digestion, capillary attraction, circulation and other physiological conditions. We dive into the bowels of the earth, or into the depths of the sea, and bring forth diamonds, pearls, precious stones and articles of comfort and utility; we are taught their nature and analysis, and the wonderful analogy in chemical composition between articles of great value and those that can be procured at a very small price. If our study is upon the air, which substance the uneducated naturally suppose to be elementary, by caging it it is resolved for us into oxygen, nitrogen and carbonic acid gas, the first of which plays such an important part in converting venous into arterial blood. We are enabled by this study more readily to make improvements in manufactures; ideas and suggestions being made to assume by its instrumentality practical and useful forms. Thus there is nothing too large, nothing too small, no space too great, no barrier too strong, to prevent investigation by means of these kindred physical sciences into the wonderful works of the Creator:

"Who spake the word and they were made;
Darkness and dismal chaos fled,
And Nature sprang to light."

Professor Morton, in a recent lecture demonstrated by experiments, some of them to us new, the atomic constitution of matter, and the forces acting upon it, cohesion, repulsion, &c. Being of interest to the dentist we note a few of them.

To prove that an atom must be of a very diminutive size, a grain of copper was dissolved in about a thimble full of nitric acid; one-half of this was placed in a glassful of the solution of the ferro-cyanide of potassium; a red color was immediately diffused throughout the liquid, produced by the innumerable atoms of copper.

He also proved that the atoms of a fluid might be separated to such a distance that it would be more than double in bulk and yet assume a more solid state. A solution of sal-ammoniac was placed in a glass into which was poured a quantity of mercury; when the latter was removed, the mass was twice as large and resembled in appearance freshly prepared Townsend's Amalgum.

To show that two liquids will form a solid a quantity of sulphuric acid was mixed with the chloride of calcium, the result being a white solid, which is in reality plaster of paris.

Two solids were made to form a liquid by triturating in a mortar sulphate of soda and nitrate of ammonia.

It was also shown that chemical affinity by a new arrangement of atoms produces a change of color. Seven glasses of water were ranged on a table. Into the first glass was poured a few drops of ferro-cyanide of potassium; into the second chromate of potassium; into the third ferro-cyanide of potassium and chromate of potassium mixed; into the fourth sulpho-cyanide of potassium; into the fifth ammonia; into the sixth sulphuric acid; into the seventh hydrosulphide of ammonium. These did not perceptibly change the color of the water, excepting in two of the glasses, where it became a very light yellow. A few drops of nitrate of lead combined with a very little sesqui-nitrate of iron were then poured into each glass, when each liquid assumed a different appearance, there being seven distinct colors.

We give these few interesting experiments with the hope that by proving it not to be a tedious study we may induce those who have given the subject due consideration or are wavering, to "fall in" at once and either attend a full course at a dental college if that be at all possible, or else by all means a partial course in these branches at a respectable college or school.

. A. T.

TIN FOIL IN RUBBER WORK.

BY DR. J. T. ABBOTT.

I formerly used collodion for coating my model, in order to prevent the plaster adhering to the rubber when undergoing the process of vulcanizing. I have discontinued the use of this, and substituted tin foil. When the model is ready for packing and dry, I coat it with mucilage and cover it with tin foil; when the rubber is vulcanized the foil will adhere to it.* I then take a stick and dipping it in nitric acid, rub the foil off, being careful not to use too much acid, as it will be apt to soften the plate.

In order to remove the teeth from an old rubber plate I boil it in oil; by this means a much higher heat can be obtained than when water is used. When hot, I lay it upon the work-bench, holding it down firmly with an instrument, and with a small excavator I separate the teeth from the rubber without in the least injuring the former.

I find that with this kind of work I can give as good satisfaction as with any other; but in certain cases I prefer the continuous gum work, especially for lower sets when weight is required. The processes and ridge are often very much absorbed and the muscles give trouble; being apt to lift the plate from its position with each movement of the jaw in mastication. The rubber, on account of being light, is more liable to give such annoyance than a continuous gum set on platina, which, by its weight, resists the action of the muscles, and is firmly imbedded in its place.

COLLODION.

Collodion is a transparent, colorless liquid, having remarkable adhesiveness and contractility. It is manufactured from freshly prepared gun-cotton by dissolving it in ether. Gun-cotton is obtained by steeping cotton in a mixture of nitre and sulphuric

*The tin foil will not adhere to rubber unless the latter is overdone, or the foil is too thin.

acid ; nitric acid was originally used. The former method is the best when intended for collodion. In order to render it more elastic for surgical purposes, two parts of glycerin are added to one hundred parts of collodion ; this makes it less liable to crack from the motion of the parts. When used with muslin or linen it acts as a substitute for sticking plaster ; the cloth is saturated with collodion and applied to one side of the wound ; by pressing it gently for a short time it will adhere firmly ; the lips of the wound are then drawn together, and the cloth is pressed gently until it adheres. The whole is then washed over with the liquid, which forms a coating that is not affected by moisture or temperature. Diluted with ether, it may be applied to chaps of the skin, slight burns, cuts, ulcers, &c., and in arresting hemorrhage from leech bites. It is used in certain diseases of the skin, acting in place of the epidermis. It was first used for the purposes of surgery, by Mr. J. P. Maynard, student of medicine, of Boston, in January, 1847.

Since the introduction of vulcanized india rubber as a base for artificial teeth, collodion has become a useful preparation to the dentist. By coating the plaster model with it, by means of a camel's hair brush, before vulcanizing, the plaster is prevented from adhering to and working into the rubber, a misfortune which causes annoyance and trouble in finishing up. Whilst operating, the patient and dentist are sometimes annoyed by fever-blisters on the lips and corner of the mouth of the patient, the bleeding from which being also very unpleasant. By applying collodion to the parts this may be arrested, immediately removing the unsightly appearance of the sore.

Collodion is used extensively in various photographic processes. It can be obtained, put up in two ounce phials, of Johnson & Lund. Price fifty cents. A. T.

It is said that Dr. Rowel, of New York, has a piece of charcoal, made from pine, which he has used for thirty years for annealing gold. Its estimated waste is one-thousandth part of an inch at each burning.

THE ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A monthly meeting of the society was held on Tuesday evening, September 1st, at the rooms of the Philadelphia Dental College. Several gentlemen were elected active, corresponding and honorary members, and several names submitted for the consideration of the executive committee. A few books were presented to the society by Dr. McQuillen and Mrs. Horace Wells.

The following paper was read :

"THE BLOW-PIPE."

BY WM. GORGES, D.D.S.

The working of metals appears to have been coeval with Adam, and it is reasonable to infer that at a very early period of the earth's history the blow-pipe was used in that connection. Within the last fifty years, important and valuable modifications have been made in the instrument, through which substances that are entirely unaffected by the action of ordinary heat can be reduced from a solid to a fluid condition with perfect facility. I refer, of course, to the great and inestimable discovery of the compound, or oxy-hydrogen blow-pipe, by the late Professor Robert Hare, of Philadelphia. For ordinary purposes, however, the more simple and primitive the pipe, the better. In this form it is not only a necessary, but an indispensable adjunct to the dental laboratory.

In entering upon the consideration of this subject, I propose, first, to consider briefly the phenomenon of *combustion*, as manifested in the flame of a lamp. *Secondly*, the various kinds of lamps and pipes which have been introduced for the use of the dentist. And lastly, the proper way to use the blow-pipe so as to secure the end desired ; for much of the loss of time, patience, and confidence in one's ability to use the pipe, depends upon an imperfect knowledge or ignorance of the philosophy which underlies this, as it does all other operations in mechanics. Who has not experienced, even after a lengthened novitiate, the greatest vexation and fatigue, approaching almost to complete exhaustion, in attempting to solder a set of teeth requiring more than an ordinary amount of heat to fuse the solder ? The greatest pains may have been taken to make a complete fit of the plate to the cast of the mouth, the teeth may have been ground and adjusted,

promising the patient as well as the operator something superior in every respect. Alas! how great the disappointment, after removing the investing substance, to find teeth cracked, or drawn from the plate, or the plate itself warped, so as to render the piece useless for the purpose intended!—such accidents being not only embarrassing, on account of the non-fulfillment of the promise to the patient, to have the operation completed at a given time, but also involving sometimes quite a pecuniary loss. In the early part of my practice I found such accidents of common occurrence with others as well as myself, and therefore recognized the importance of becoming thoroughly acquainted with the subject in all its bearings. If in my presentation of this matter you should regard some points touched upon as too elementary in their character, you must refer it to a desire on my part to awaken others to a necessity of becoming acquainted with the basal principles.

Fownes says that, “(in the most general sense,) a body in a state of *combustion* is one in the act of undergoing intense chemical action; any chemical action whatsoever, if its energy rises sufficiently high may produce the phenomenon of combustion by HEATING THE BODY TO SUCH AN EXTENT THAT IT BECOMES LUMINOUS.”

In the ordinary combustion of substances, it is an indispensable requisite that there shall be a due supply of oxygen brought in contact with the flame, or the action will cease. Combustion is therefore due, under these circumstances, to the union of an inflammable substance with oxygen, attended with light, and in most instances with heat. It is the latter consideration, or the elimination of heat, which is most interesting and important to us at the present moment. With this object in view, it may not be amiss to direct attention to the well-known fact that the flame of a candle or lamp burning in the air is hollow, and that when carefully examined it is found to be composed of three distinct portions, as represented in Fig. 1*. Their characteristic properties are as follows. The outer cone or envelope C gives forth very little light, but possesses a very high *temperature*; the cone inside of this, B, is highly luminous; while the internal portion A is dark, and composed of combustible matter. When a current of air is driven by the blow-pipe against a flame, the nozzle of the instrument being in contact with the flame, “two long pointed cones (Fig. 2) are observed in place of the double envelopes just described, the outer cone being yellowish, and the inner blue, a double combustion taking place by the blast *inside*, and the external air.” The space between the inner and outer cones

*The figures referred to in this article will be found in the October No. (1883) of the Dental Cosmos.

is filled with exceedingly hot combustible matter, possessing great deoxidizing or melting powers. In the use of the blow-pipe it is a matter of importance to bear in remembrance the point where the highest elevation of temperature exists. It is not an unusual thing to see a tyro ignorant of these facts blowing a blast of cold air on his work, by placing the nozzle of the pipe too far in the flame; for, paradoxical as it may appear, the instrument can be made to blow hot or cold.

The mouth blow-pipe is the instrument in general use, but I have discarded it for the following reasons. In studying the physiology of respiration, I was led to question whether air which is exhaled from the lungs will support combustion, for the air blown from the mouth must have been inhaled into the lungs to perform its part in sustaining organic life. Chemistry teaches us that atmospheric air is a compound gaseous body, composed of twenty volumes of oxygen to eighty of nitrogen, and is indispensable to organic existence. In performing its part in the animal economy, it undergoes a change; the oxygen is *absorbed*, and the carbonic acid gas is *expelled*.

"There is a popular theory which declares respiration to be a process of *combustion* or *oxidation*, and it no doubt has caused many a reader a pleasant feeling of surprise when first informed that the burning of a candle, the rusting of iron, and the process of breathing were only three forms of the same process, three names for three different forms of combustion or oxidation. There is great satisfaction in such generalizations when they are true, and one regrets to find that sometimes they are not; this one is not. The burning of a candle and the rusting of iron are indeed two forms of one process of combustion; they are oxidations; but respiration can no longer be considered in any sense as a process of oxidation. Respiration as a process is two-fold—the *exhalation of carbonic acid*, and the *absorption of oxygen*. The difference between the two processes may be summed up as follows: *combustion* is only *oxidation*, while respiration is not *oxidation*, but an *exchange* of gases. In the combustion of the candle, the oxidation is everything, and no process of exchange takes place. In the breathing of an animal, the exchange is everything, and no oxidation takes place. It is a well-known fact that if a lighted candle is lowered into a well containing carbonic acid gas, it is speedily extinguished."

The foregoing facts have induced me to regard the air exhaled from the lungs, loaded as it is with carbonic acid gas, as unable to support combustion, and therefore unfit to be used for the purpose of soldering. It may be said that the mouth-pipe has been used from time immemorial, and that the flowing of solder has been and can be readily effected by it. While admitting this to

be the case, it does not militate against the correctness of my conclusions, that it is far better to use the blow-pipe with some apparatus by which atmospheric air may be employed in place of the air exhaled from the lungs.

Various ingenious contrivances have been invented as substitutes for the mouth pipe. The majority of these are on the self-acting principle, in which the heated vapor of alcohol is driven by expansion from a reservoir or boiler through the pipe on a flame of the same substance.

A brief description of some varieties of these may not be amiss, as they have a direct bearing on the subject under consideration; and while they are familiar to many present, there may be some here and elsewhere who are not acquainted with them.

The first of these (Fig. 3) consists of a lamp, made of tin, capable of holding half a pint of alcohol, having two wicks, over one of which, a brass boiler, containing the same quantity of alcohol as the lamp, is suspended on an upright rod, the boiler being readily moved up or down the rod by means of a set screw; the second wick of the lamp is placed in such a position as to be in a direct line with the vapor of alcohol escaping from the boiler through the pipe. Two points can be attached to the pipe, so as to produce either a flaring or a pointed flame.

Another modification of this is formed by a boiler made of sheet-brass, supported on a sheet-iron frame, having a lamp underneath made of tin. This acts upon the same principle as the first described.

In each of these it will be seen that the lamp not only supplies a flame for the vaporization of the alcohol in the boiler, but also one in addition for the soldering. The next one to which attention is directed, however, known as Hollely's patent, is somewhat different. The boiler in this has a lamp underneath it for the vaporization of the alcohol, and another in front of the pipe to be employed in soldering. The pipe is so arranged as to allow the vapor of the alcohol to escape, by means of a faucet, through a large or small aperture at the end of the pipe, in this way producing either a pointed or flaring flame.

The Macomber gas blow-pipe (Fig. 4) is an ingenious contrivance, and is designed to be attached to a gas-pipe, employing gas in place of oil or alcohol. It may be described as follows: No. 1 is a double tube, or rather a tube inclosing a tube, the atmospheric air being driven through the centre tube, adding force and giving a cylindrical form to the flame. No. 2 is a stopcock, by which the size of the flame may be regulated. No. 3 is a movable joint, by which the flame can be directed upward or downward.

The best arrangement for soldering, to my mind, is one which

I have in use, made by myself. It is not only simple and inexpensive in its construction, but eminently efficient. It consists of a plain deal table, having connected with it a small bellows of the blacksmith pattern, sixteen inches long, and nine inches wide at its broadest part. The nozzle of the bellows is connected with a long metallic tube which passes through the top of the table, where an ordinary blow-pipe is attached to it in a stationary and perpendicular manner. The nozzle of the blow-pipe is bent down at angle of forty-five degrees. With an apparatus of this kind, the pipe being stationary, the operator has his hands entirely at liberty, as the bellows is worked by the foot.

A very satisfactory apparatus (Fig. 5) is employed by many practitioners, consisting of a table with an air-chamber 1, into which the air is driven by a force-pump 2, the latter being worked by a treadle 5, and spiral spring. The pipe 3 conveying the air from the chamber is so arranged on the table as to be moved about in any direction to meet the lamp 4, which can be placed in such position as may be demanded by the work in hand.

As a preparatory step, when engaged upon a case requiring soldering, I invert the set of teeth over a flame of ordinary gas, so as to heat it up gradually until the plate and teeth are brought almost to a red heat; then with the pipe I direct a broad flame on the work, steadily intensifying without reducing the volume of flame, until the soldering is completed, which can easily be done by adding weights to the top of the bellows. I never concentrate the flame to a focus on any one point of the work, or use what is called a pointed flame, believing that the alternate and sudden variations of temperature to which the operation is subject under such circumstances is the cause of the warping of plates and the cracking of teeth, so much complained of by many practitioners. These difficulties are increased by the difference in expansion and contraction between the plate, teeth, and investing material. This last-named cause of trouble in soldering is a direction in which I propose to make some experiments, and will in a future paper give the results of my observations in detail.

Dr. Flagg described the proper method of employing the muscles pertaining to the throat and palate, for forcing the air into the cavity formed by the cheeks, using the tongue as a valve, and the natural elasticity of the buccal tissues to compress the air with the requisite force.

Dr. Wardle was not much in favor of the mouth-pipe.

Dr. Kingsbury thought that the eolipile or self-acting alcoholic blow-pipe was certainly a great acquisition to the dental laboratory; had used it for a great many years.

Dr. McQuillen said that it required, when using the mouth blow-pipe, a full, deep and rapid inspiration through the nostrils, without taking the pipe from the mouth, and then to drive the air in the act of expiration, gradually but forcibly, through the pipe on the flame; alternating these acts in a calm, regular and methodical manner. He was in favor of the use of the mouth blow-pipe.

Dr. Lusson uses a blow-pipe having a supply of gas enter midway of the pipe which is ignited at one extremity, and supplied with additional oxygen from the other by means of the lungs, as in the common blow-pipe.

Dr. Neall uses a force-pump in connection with the pipe.

An adjourned meeting of the society was held on Tuesday evening, September 15th, when Professor Morton of the Philadelphia Dental College exhibited the oxy-hydrogen blow-pipe, gave its history and explained its uses, together with its connection with drummond light, and its application to the stereopticon and exhibition of "The Ghost."

A meeting of the society was held on Tuesday evening, October 6th, when the regular order of business was suspended to enable Dr. N. W. Kingsley of New York to give the meeting a description of his method of constructing an artificial velum of soft vulcanized rubber. For a minute description of the manner of constructing this velum, with the principles involved, we refer our readers to the new edition of "Harris' Principles and Practice of Dental Surgery." After Dr. Kingsley had finished his interesting description, Dr. Wardle moved that a vote of thanks be tendered to Dr. Kingsley for the admirable description which he had just given of his excellent apparatus.

Dr. McQuillen offered as an amendment to Dr. Wardle's motion that a committee of three be appointed to prepare a suitable testimonial to be presented by this society to Dr. Kingsley, in acknowledgment, not merely of the valuable improvement made by him in the artificial velum and palate, but also on account of the high stand taken by him in giving freely to his fel-

low-practitioners the result of his labors, in place of holding it as a secret, or adopting the course pursued by too many, of patenting any small affair which by accident or design they may happen to introduce to the notice of the profession.

A gold medal was suggested as an appropriate testimonial.

The motion and amendment having been agreed to, Dr. McQuillen, Professor Morton and Dr. Flagg were appointed to attend to this matter.

An adjourned meeting was held on Tuesday evening, October 13th. Dr. McQuillen read a letter from Dr. C. W. Spalding of St. Louis, Mo., in which he advocates the *thorough* exploration of the mouth, allowing sufficient time for the purpose, and then a reasonable sum charged by the dentist for the valuable service rendered the patient.

The following paper was read:—

“ANÆSTHESIA.”

BY DR. AMBLER TREES.

A humane and sympathetic surgeon is always desirous of performing the duties of his calling with the least amount of pain consistent with the perfection of the operation, and the well-being of his patient. As the pain attendant upon close contact of the scalpel or lancet with nerves, tissue, and blood-vessels, is often agonizing, it is not to be wondered at, that for ages the minds of physicians, surgeons, and scientific men have been dwelling upon the means of destroying the sense of feeling of a fellow-creature, while undergoing surgical treatment; and not until the present century has success attended the efforts made in this direction.

That our forefathers hoped and longed for the discovery of anæsthetic agents, we have ample proof. I have seen a book, published in London about two hundred years ago, containing a comic poetical illustration of this subject; this was republished in the *Dental Monitor*, in 1855. I crave your indulgence while reading it, not because it contains many very brilliant gems of thought, but because it shows how many years and even centuries may pass before experiment or accident reveals certain objects or ends sought for,—and because it proves *all* inventions cannot be originated to order.*

Anæsthesia is accomplished—first, by the inhalation of nitrous oxide gas, ether, or chloroform; second, by electro-magnetism; third, by local appliances.

* See pages 102 and 103, of this No. of the Dental Quarterly.

Nitrous oxide or the peroxide of nitrogen, sometimes called from its peculiar effects, *laughing gas*, is manufactured by decomposing nitrate of ammonia. The latter substance is subjected to a heat of 500° in a retort. It is resolved into water and nitrous oxide, one atom yielding three atoms of water and two of nitrous oxide. The water condenses in the neck of the retort, and the nitrous oxide is received in a pneumatic jar. It has a sweetish taste, is colorless and transparent. When breathed, it is very rapidly dissolved in the blood, and carried by the circulation to every part of the body, oxidizing everything in its path, and producing transient intoxication. It is necessary to inhale it about two minutes to effect insensibility to pain. This will last about two minutes more, when it requires a repetition of its inhalation for further operations.

This gas is exciting a great deal of attention at the present time among the dental profession, as it is said to be perfectly harmless, and unattended with the unpleasant influences and effects very often arising from the inhalation of ether or chloroform. The apparatus for manufacturing it in large quantities can now be obtained at the dental depots.

Sulphuric ether is a colorless liquid, of a sweet odor, and slightly burning, pungent taste. It is prepared by the distillation of alcohol and oil of vitriol. It is volatile, evaporating rapidly with the production of cold. On this account it is sometimes used as a local anæsthetic, with partial success. It will relieve the pain of a burn, if applied while the part is subjected to a stream of air. In earache it sometimes produces immediate relief, if dropped into the ear.

In 1844, Dr. Horace Wells, of Hartford, Conn., demonstrated the practicability of inducing an anæsthetic condition by the inhalation of nitrous oxide gas, and also the vapor of sulphuric ether; but, although he gave this information to many prominent scientific men, it nevertheless attracted but little notice until 1846, when attention was again drawn to ethereal inhalation, by Dr. Morton, a dentist of Boston, who, by calling it "*Letheon*," gained for it notoriety through the means of mystery. As usual with all discoveries, there are several claimants of the honor suggesting the use of this agent to produce insensibility to pain, which is now used throughout the world. The vapor should be mixed with the air, and for that purpose it should be inhaled through a sponge, and applied over the nostrils in preference to the mouth—the fingers being kept on the pulse; and in case of its becoming feeble, the sponge should be removed until the circulation becomes more free. It produces its effects in from two to five minutes. The dose is about two fluid ounces. When it is good, it evaporates from the hand without leaving a disagree-

able odor. It is very inflammable. Death has ensued from the use of ether, in but very few cases; the number being infinitely small, when we consider the great extent to which it is used. It is preferred to chloroform, on account of the greater danger in using the latter agent.

Chloroform is a colorless liquid of a very sweet and burning, pungent taste. It is made by distilling a solution of chloride of lime and alcohol. It is heavier than ether, and unlike it in not being inflammable. On this account chloroform is a better solvent, as no danger need be apprehended from its taking fire.

It decomposes when subjected to the light, and should therefore be kept in a dark place. Like ether, it is apt to be impure. If pure, it will remain transparent at the bottom of the glass. It was discovered by Mr. Samuel Guthrie, of Sackett's Harbor, N. Y., in 1831. He supposed it to be the chloric ether, the well known oily liquid of the Dutch chemists, but it proved to be what is now called chloroform.

In 1847, Dr. Simpson, of Edinburgh, in searching for a substitute for ether, at the suggestion of Mr. Waldie, tried chloroform. Its advantages over ether are, smallness of dose and more prompt action, besides being cheaper. Insensibility is produced in from one to two minutes. The dose is a fluid drachm. It is dangerous to give a full dose. There have been more deaths reported from its use than from the use of ether. Equal parts of chloroform and alcohol have been commended as the best anæsthetic agent, the latter obviating the depressing influences of the former.

Chloroform should not be administered to persons subject to epilepsy or affected with organic disease of the heart.

Anæsthesia by electro-magnetism was discovered by Dr. Frances, of this city, a few years ago. The forceps being attached to the positive wire, and the patient's hand clasping the negative, a current of electricity is established as soon as the forceps touch the tooth. The tooth is then drawn, it is said, without pain. It excited a great deal of attention at the time, and several committees were appointed by various bodies to investigate its merits. Some of these decided in its favor, while the others ridiculed it. A brother dentist tells me that he has used it with entire success, and he could not do without it.

The most successful local anæsthetic is the freezing mixture of ice and salt. This was first used in dentistry by Dr. Branch, of Illinois, in 1855. He employed a cylindrical receptacle, made of gutta-percha, with one end covered with a piece of bladder, or membranous sac, and the other end closed, when ready for use, by means of a screw cap. Into this cylinder, pulverized ice and salt were introduced, a spiral spring inserted to press it toward the covering, and the cap screwed on. The mixture, inclosed in

the bladder, was than applied to the tooth and gum until the latter assumed a white appearance, and the tooth then extracted. I have had some experience with this agent, and the only objection I have to it is the trouble in preparing the mixture, and the difficulty of applying it to the back teeth. I have been successful in extracting teeth without pain, in about six or seven cases out of ten.

On account of persons being of different temperaments, it is impossible to arrive at definite conclusions with regard to the success of the two last named methods of producing anæsthesia. Some will tell us that they did not experience the least amount of pain; others will assure us the pain was very slight; and others again will affirm that the pain was very great indeed. Some will give manifestations of intense agony during the performance of the operation, and after it is done will coolly tell us that they felt no pain whatever. Of the truth of such assertions I have satisfied myself. On one occasion, before extracting a tooth for an Irish girl, which class of people I had been told would scream at the least provocation, I examined her mouth, then picked up the forceps, and deliberately held the instrument within half an inch of the tooth for a few seconds. The yell she uttered would have startled me, had I not been prepared for it.

Cases often occur in every dentist's practice, where it is expedient and proper to make use of an anæsthetic; and it would be well, therefore, for us all to take this subject into serious consideration,—to experiment under competent instructors on the various agents, so that we may arrive at a definite conclusion in regard to one or more of them; to adopt and perfect ourselves in the one that we prefer, and to use it in such instances as our judgment and conscience may permit.

Dr. Flagg said that he believed himself correct in asserting that no death of a human being had ever ensued as the result of ether inhalation for the purpose of inducing the anæsthetic condition.

Dr. McQuillen, from what he had seen of and read about ether, felt pretty well assured that if any case of death had occurred from its inhalation, it must have been due to gross carelessness, on the part of the operator, and might be regarded as caused by suffocation rather than etherization.

Dr. Kingsbury made interesting and extended remarks on the history of anæsthesia, and thought the surgeon or dentist had the divine sanction for the employment of the best agents for inducing a temporary suspension of nervous sensibility, in order

to secure immunity from the pain otherwise pertaining to surgical operations.

The manufacture of nitrous oxide was demonstrated by Professor Morton, and one of the gentlemen present inhaled it, but there was not enough manufactured to induce the anæsthetic condition.

Professor Morton said that nitrous oxide might be obtained by several processes :

First. By decomposing nitric oxide by the long continued action of iron filings, or other absorbent of oxygen.

Second. By the action of dilute nitric acid upon zinc or tin.

Third. When nitrate sulphate of ammonia is thrown into an acid.

Fourth. By dissolving proto-chloride of tin in hydrochloric acid ; heating the solution in a retort over the water-bath, and dropping in crystals of nitre through a tube dipping into the liquid.

Fifth. By heating the nitrate of ammonia in a flask or retort until a gentle ebullition takes place in a fused salt, and keeping up this action until the material is nearly exhausted.

The gas is obtained in a pure state only by the last two methods ; the last of all on account of economy, ease of manipulation, &c., being the one practically employed.

At the meeting of the society on Tuesday evening, November 3d, the subject was again taken up, and ably discussed by Drs. Ellis, Wardle, Flagg and McQuillen. Dr Flagg said that he had exhibited ether about two thousand times within the past two years.

The opening address at the Pennsylvania College of Dental Surgery was delivered by Professor W. S. Forbes, on Monday, November 2d, at the College building on Arch street near Sixth. above Arch.

The introductory address at the Philadelphia Dental College was delivered by Dr. J. F. Flagg, on Monday afternoon, November 2d, at the College building on Tenth street.

Dentists visiting Philadelphia should not fail to manifest their interest in scientific dental education by visiting these institutions. A peep at the cabinets alone will amply compensate for a few hours spent at either place.

CONDENSED ARTICLES FOR THE DENTAL QUARTERLY.

BY WM. P. HAYWOOD.

CEMENT FOR VULCANIZERS, &c.—Take equal parts pure white and red lead, mixed with burnt linseed oil. Excellent for stopping leaks around thermometer or top of boiler.

MOULDING SAND.—Get the best article of moulding sand you can find; dampen it the day before it is wanted; then have a sufficient quantity of fine soap-stone ready; to every six quarts of sand add half a pint of soap-stone just before moulding. If the zinc boils, use the sand as dry as will be compatible with moulding; stir the melted zinc with the end of a pitch pine stick until the metal assumes a thick mushy appearance, then with the stick scrape the metal into the sand mould, when a very correct and bright cast free from bubbles and roughness will be obtained.

TO REMOVE TEETH FROM RUBBER PLATE.—Grease the plate on both sides, then heat over a lamp or on a stove until soft enough to bend, when the teeth can readily be removed by any instrument lying handy.

WHERE a *cheap*, full (and long) under set of artificial teeth is desirable, the best mode of proceeding is to make a base of *cheoplastic*, leaving loops along the outside on top of ridge, and a rim; then fit the teeth (section blocks) and fasten on with hard rubber, or coralite. This makes a beautiful and substantial case. It also enables the dentist to get any desirable weight. As a new article of cheoplastic alloy has been recently introduced, one that will not oxidize or corrode, is equal to silver for beauty and strength, admits of the adoption of rubber teeth with greater safety than the rubber itself, we are justified in saying it will soon supersede all other materials for full under sets, where cheapness, comfort, cleanliness and durability are the *desiderata*.

In the next No. of the "QUARTERLY" we will give a detailed description of *The best mode of Electro-Gilding Rubber Plates*.

"A substitute shines brightly as a king,

Until a king be by;"

A plate that's gilded o'er is just the thing

Until you come too nigh.

NOTICE OF BOOKS.

A Manual of Extracting Teeth, founded on the anatomy of the parts involved in the operation; the kinds and construction of the instruments to be used; the accidents liable to occur from the operation, and the proper remedies to retrieve such accidents. By Abraham Robertson, D. D. S. M. D., Author of "Prize Essay on Extracting Teeth," etc. We have received this acceptable volume from those standard publishers, Messrs. Lindsay & Blackiston. It is a neat work of about two hundred pages, with illustrations copiously sprinkled through the book, written in a pleasant, racy and almost colloquial style, well calculated to instruct without the labor and fatigue attending the study of dry technicalities. We particularly commend the short chapter on Anesthetics to professional notice, as containing the essence of common sense and the result of every thorough dentist's conclusions. Dr. Robertson has laid our profession under another obligation for this effort. Price \$1 50.

VARIETIES.

IN winter the surface of water, such as that of lakes, rivers &c., is acted upon by the cool air resting upon it, and is gradually, and in very frosty nights rapidly, cooled. As the water is cooled on the surface, the particles become denser, and these go down and abstract the heat from those below. The moment the water has cooled to thirty-nine degrees, it is no longer capable of contracting by the cold, but the water at the surface becomes lighter than that below, and floating, blanket-like, protects the latter from the cold, water being a bad conductor of heat. Water gives off a larger quantity of heat than any other substance, in order to have its temperature reduced from one point to another. This property is called its specific heat. It is therefore endowed with peculiar properties, whereby it retains its fluid condition for a long period when exposed to cold. If it were not for this provision of nature our climate would be uninhabitable, owing to the vast masses of ice which would be formed during winter, and the frequent frosts that would visit our fields in cool summer evenings.

A **WARPED** plate may sometimes be restored by firmly binding it with iron wire to its place on the plaster cast, protecting the teeth with investment, and subjecting the plate to a high heat.

OS ARTIFICIAL is useful in the laboratory as well as in the office. Several shades of gum color may be made by mixing rouge with the white preparation in different proportions; a very small amount of rouge will suffice. To fill in crevices between the plate and teeth this is very often invaluable.

JESUS, says a Persian story, arrived at a certain city and sent his disciples forward to prepare a supper, while he, himself, intent on doing good, walked through the streets into the market place. And he saw at the corner of the market, some people gathered together looking at an object on the ground, and he drew near to see what it might be. It was a dead dog with a halter around his neck, by which he appeared to have been dragged through the dirt; a more abject, a more unclean thing, never met the eye of man. And those who stood by, looked on with abhorrence.

"Faugh!" said one, stopping his nose "it pollutes the air. How long shall the vile thing pollute our sight?"

"Look at his ears" said another, "all dragged and bleeding. No doubt he has been hanged for stealing."

And Jesus heard them and looking down on the dead carcass he said, "*Pearls are not equal to the whiteness of his teeth!*"

Then the people turned to him with amazement, and said among the themselves "Who is this? This must be Jesus of Nazareth, for only he could find something to pity and approve even in a dead dog!" And being ashamed they bowed their heads before him, and each went his way.

THE educated dentist should never suggest the use of *charcoal* to his customers nor permit the same to be used as a dentifrice, without rebuke. Charcoal is almost pure *carbon*, and is almost as hard as diamond powder, to which it is so closely analagous in composition. Triturate it as finely as we may, when used on the enamel of the teeth it acts like a file. The trituration only increases the fineness of the little needle shaped points. If persons *want* to destroy their teeth, they cannot take a more effectual way of doing it, than by using either wood or animal charcoal.

G. R. W.

NOVELTY IN AIR CHAMBERS.—We have recently seen and examined a rubber plate with *three air chambers*, i. e., one in the usual place in the centre, and the others in the alveolus, just forward of the tuberosity. Those on the alveolar ridge were three-quarters of an inch in length, one-quarter of an inch in width, and about one-sixteenth of an inch in depth. The idea is suggestive. It certainly prevents *rocking* in the plate.

TOOTH PULLING IN THE SEVENTEENTH CENTURY.

(From Tim Bobbin's Human Passions Delineated, published in London.)

[We are indebted to Dr. J. G. AMBLER, of New York city, for the following cuts.]

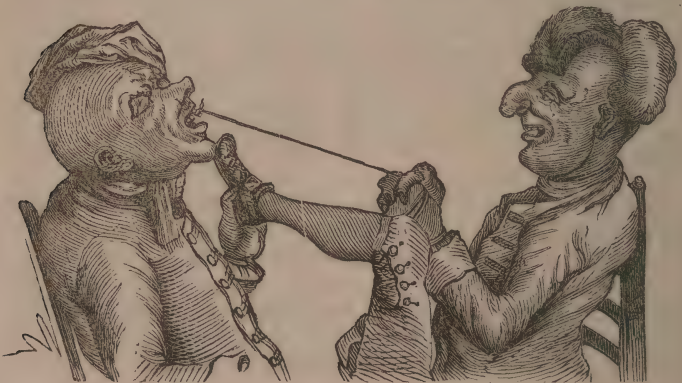


A Doctor once much puzzled was
To find out ways and means,
How teeth to draw of ev'ry class,
Without such racking pains.

A packthread strong he tied in haste
On tooth which sore did wring ;
He pull'd, the patient follow'd fast,
Like Towzer in a string.

He miss'd at first, but try'd again,
Then clap'd his foot o'th' chin;
He pull'd—the patient roared with
pain,
And hideously did grin.

But lo ! capricious fortune frown'd,
And broke the clewkin string,
And threw him backwards on the
ground,
His head made floor to ring.





An old wife next, with wrapt-up jaw,
And her last tooth, did come;
This tooth, thought he, I soon can
draw,
And gain some credit from.

So he the pincers took in hand,
And pulled with might and main,
But these slipped off we understand,
Which much increased the pain.

This made the doctor cast about;
And muse, in doleful dumps:
If fast with large teeth drawing out,
What must I do with stumps?

He puzzling stared; next man,
thought he,
I'll try the string again;
The knack I've found most certainly
To do't with little pain.

Now string's put fast on tooth that
aches,
Which round his hand he wraps.
A glowing coal i'th' tongs he takes,
And to his nose he claps.

The sight and smell of fire drove
back
The patient's head in fright,
Who drew his own tooth in a
crack,
And proved the doctor right.



EVER since the settlement of New Zealand by Europeans their attention has been daily called to the peculiarities of a kind of metallic sand along the shores of New Plymouth in Yaranaki. This sand has the appearance of fine steel filings, and if a magnet be dropped upon it and taken up again, the instrument will be found thickly coated with iron granules. The plane where the sand abounds is along the base of Mount Egmount, an extinct volcano, and the deposit extends several miles along the coast. This metallic sand has been carefully analyzed by several well known metallurgists, and has been pronounced the purest ore that is at present known; it contains 88.45 of peroxide of iron, 11.43 of oxide of titanium, with silica, and only 12 of waste in one hundred parts. Taking the sand as it lies on the beach and smelting it the produce is 61 per cent. of iron of the finest quality; and again if this sand be subjected to what is called the cementation process, the result is a tough, first-class steel, which seems to surpass any other known description of that metal.

TO MOUNT CONTINUOUS TEETH ON RUBBER.—When fitted to the cast take one-third Spanish whiting and two parts plaster for an investment. Stir well. In packing be sure to have no excess of rubber, and be careful not to screw the flask too tightly.

T E E S'

OFFICE-TABLE APPARATUS

FOR

Generating Nitrous Oxide Gas.

Price, \$15.

For sale by JOHNSON & LUND,

No. 27 North Seventh Street,

Philadelphia.

THE
DENTAL QUARTERLY:

DEVOTED TO THE INTERESTS

OF

DENTAL SCIENCE.

VOLUME III.—1864.

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THE DENTAL QUARTERLY.

VOL. 3.

PHILADELPHIA, MARCH, 1864.

No. 1.

NITROUS OXIDE.

Nitrous oxide, or the peroxide of nitrogen, which has been creating a *furore* among dentists for the past few months, was discovered by Priestly in 1772. It has received various names, such as *Dephlogisticated Nitrous Gas*, *Nitrous Oxide* and Gaseous Oxide of Azote. Twenty-seven years after its discovery, in 1799, Sir Humphrey Davy, while boldly experimenting found that it produces on being inhaled violent and peculiar exhilaration. In August 1840, Dr. Horace Wells, of Hartford, Connecticut, while conversing with a person on the subject of extracting teeth, remarked, "That he believed that a man might be made so drunk by this gas, or some similar agent, that dental or other operations might be performed upon him without any sensation of pain." In 1844, Dr. Colton administered the gas to several persons, in the presence of Dr. Wells; one of them while under the influence of the gas received a severe hurt, and not giving any evidence of pain, Dr. Wells remarked to a friend again, "That a man by taking that gas could have a tooth extracted or a limb amputated and not feel any pain." The next day after this, Dr. Wells, while under the influence of nitrous oxide, had a large tooth extracted and on coming to his senses, cried out "It did not hurt me more than the prick of a pin. It is the greatest discovery ever made." He also discovered that sulphuric ether has the same power of producing anæsthesia. After this, the experiment was tested in many operations both large and small. Thighs were amputated, tumors removed, cancers dissected out, and many other operations performed, and perfect faith was declared in the discovery. Ether, however, in a little while, on account of its convenience, entirely superseded the gas; although the latter holds the pre-eminence in regard to ease and quickness of administering and beneficial effects; and on that account should be used in small operations.

Nitrous oxide can be made in several ways :

1st. By the decomposition of Nitric oxide by the long continued action of iron filings or other absorbents of oxygen. One-half of its oxygen combining with the metal.

2d. By the action of diluted nitric acid upon zinc or tin.

3d. By throwing nitrate sulphate of ammonia into an acid.

4th. By dissolving proto-chloride of tin in hydro-chloric acid, heating the solution in a retort over the water-bath and dropping in crystals of nitre through a tube dipping into the liquid.

5th. By heating the nitrate of ammonia in a retort until a gentle ebullition takes place and keeping up the action until the material is nearly exhausted.

The gas is obtained pure only by the last two methods.

There are several different apparatus employed in its manufacture, being large and small. The most simple of the large ones probably is that made by means of the common whisky or wine barrel, and might properly be called the *Home-made*. This apparatus is made by boring two holes in the top of the barrel, through one of which a long metal tube is run to the bottom; and in the other a short one is inserted, for the gas to pass out. Through the bung hole another wide tube is run to the bottom, through which passes an india-rubber tubing from the mouth of the retort. Before manufacturing the gas the barrel is filled with water. The gas as it is generated in the retort, passes through the tubing, ascends through the water, displacing the latter by degrees until the barrel is filled. The water as it is displaced flows out through the interstice between the india-rubber tubing and the metal tube. When the process is finished this tube is closed by means of a cap or cork. The gas is passed out of the barrel, by pouring water through the long tube and having a bag attached to the short one to receive it. There are other large apparatus more finely finished and better adapted for the purpose with two reservoirs, (the one capping the other), the one to receive the gas, the other to hold the water for purifying. The gas remains over the water until exhausted by use, and can be kept pure in this way for four or five days.

The small apparatus now for sale by Johnson & Lund (see advertising columns) consists of a retort or flask for containing the nitrate of ammonia, heated over a sand bath, a glass purifier holding a gallon of water, and a receiving and inhaling bag, complete with stop-cocks, rubber tubings, &c. By means of this apparatus, which can be carried under the arm, the operator can manufacture the gas at his office or at

the house of the patient or while operating. By using the sand bath, there is no necessity for regulating the heat at the outset, since the full blaze of the lamp can be applied at once and remain so until the salt has fused and commenced boiling. The flame can then be regulated so as to keep the nitrate of ammonia gently boiling. The time required from the lighting of the lamp until the process is finished varies according to the size of the retort and the amount of gas to be generated. From 12 to 25 gallons of gas can be made in less than an hour with a half-gallon flask or retort. By hanging the bag in a cool place the gas may be kept for twenty-four hours or more. On this account it can be made the evening before it is used. Those having but little extracting to do may find a twelve gallon bag amply sufficient. Others having a larger practice of this kind will find a twenty-five gallon bag both light and convenient and sufficient for all practical purposes.

Nitrous oxide when pure is a colorless gas, and for the first instant on inhaling has a sweet taste. It produces a very high degree of excitement, both muscular and mental, being similar, it is said, to the first stages of intoxication; but as we have never been "half seas over" we cannot vouch for the truth of that. It produces a different degree of excitement in different individuals, some becoming very boisterous, and others remaining comparatively quiet; but as far as our experience with it goes, these effects are produced only when taken for amusement or experiment in a standing posture and not when taken for the purpose of surgical treatment. We have yet to see the first case of violent conduct in the operating chair. When properly managed by experienced exhibitors, this will but very seldom happen. When animals are confined in the gas they die speedily, more we opine, from too much breath than from the want of it. It is decomposed by heat and the electric spark, and is liquified by pressure. When impregnated with one-fifth its volume of water, nitrous oxide water is formed. Some years ago Dr. Geo. J. Zeigler, of this city, experimented in the revivifying effects of nitrous oxide water. Dogs were poisoned with carbureted hydrogen, chloroform, carbonic acid, hydrocyanic acid and other agents, and when in a state of suspended animation were resuscitated by the injection of two or three pints of nitrous oxide water into their bowels. Dr. Zeigler thinks, as the result of his experiments, that nitrous oxide is a powerful arterial, venous and cerebral stimulant, possessing valuable antidotable powers.

In the long continued operations of the physician and surgeon, ether and chloroform are the best adapted, since the anæsthetic state is of

much longer duration with those agents than with nitrous oxide. The majority of operations by the skilful dentist require but a minute of time for the performance, and the recovery of the patient in a few minutes ready to be dismissed, with pleasant rather than unpleasant effects, is an advantage on the side of nitrous oxide not to be weighed lightly. The effects of ether and chloroform are by no means so happy, except in a few instances; being depressing and sickening, and perfuming the office of the operator with the substance all day, in spite of open windows and scented carpets—a perfume disagreeable to the majority of people and sickening to many. Of these two agents, however, chloroform is to be preferred. In proper hands it is just as safe as any anæsthetic, and by mixing it with equal part of alcohol, much of the depressing effect will be obviated.

Nitrous oxide supports combustion to a great degree, the glowing wick of an extinguished candle, when introduced into a vessel of it is immediately kindled into a flame. The combustible material combines with oxygen and forms water, and oxide or an acid and nitrogen set at liberty. To inhale it successfully the nostrils should be closed, unless the person can avoid breathing through them. The inspiration should rather be short than long, yet not too short, the lungs being well expanded. It is well to take a long inspiration of air before commencing to breathe it. The effects will be apparent in about thirty seconds; respiration is increased, the eyes become fixed, and if carried too far total unconsciousness will result. This the point of danger with all anæsthetics, and the time to induce it varies in different individuals; some being hurried to that point in thirty seconds, and others again requiring from two to five minutes when chloroform or nitrous oxide is used. The jaws will become fixed before this point is arrived at, and insensibility to pain is induced even before that is reached; when the fifth pair of nerves is affected we need go no further, and indeed should not go to that.

In regard to using this gas in certain abnormal conditions, the most experienced operator would perhaps do well to keep in mind the old but sensible adage, "Every man to his own trade"—and however well versed he may deem himself in the principle and practice of medicine, possessing even the degree of Doctor of Medicine, he should remember that such practice is not the every day business of his life; and by meddling in what does not concern his business he is only fostering self-conceit and presumption, which may lead him at no distant day into trouble and distress of mind; a state of things which may be obviated by consultation with the regular practicing physician, when any doubts exist as to the practicability of its administration.

A. T.

DESTROYING PULP.

DESTROYING PULP.

BY JOHN C. OSMOND.

MESSRS. EDITORS :—Your permission in the “QUARTERLY” to state such new “thoughts as might suggest themselves to me in my practice,” is responded to by some suggestions in reference to destroying the pulp in cavities.

When I find it necessary to destroy the “Pulp” I proceed as follows : I carefully remove the decay from the cavity so that I can place the destroying agent in as close proximity to the living pulp as I can possibly get it; because I have found by a very long experience that the interposition of any substance between the pulp which I wish to destroy and the destroying agent, will greatly retard its action and cause intense irritability. When the pulp is in this irritable state, no paste which I can introduce will act upon it. Now my experience amply shows me that the only remedy that can be made use of for this condition of “Irritability” is patience and *time*. When I have failed in killing the pulp after the first application of the “paste,” I have tried many means to complete its destruction, but all in vain. *Time* is the only remedy. Sometimes it will take one week to induce the complete cessation of irritability in the angry pulp—sometimes three weeks are necessary. When I find by examining the tooth, that the peculiar irritability has ceased, I proceed to re-apply the paste, and its application never causes pain, for all the sensitiveness it had in its original state is destroyed. And here, I cannot too strongly urge upon the dentist, the necessity of using exceeding care and judgment, that he may apply sufficient paste to destroy the pulp, and not enough to destroy the tissue of the gums and the tooth at the same time. Now, in order to avoid this last effect, I have availed myself of a formulæ, given by a gentleman of your city. It is not new, but I have found it in my practice the best substance I can use :

R Arsenious acid, 30 grains,
Sulph. Morphia, 20 “
Creasote, quan. suff.

We do not claim this original with us, but we can say we have tried it in hundreds of cases, and have always found it effective. Our manner of manipulating it is this : Put the arsenic in a wedgewood mortar, and grind it steadily, for five hours. Keep it in a moist state with the creasote while it is being triturated. When it is sufficiently ground, add

the morphia and a little more creasote, and keep on grinding it for one and a-half hours, remembering to keep it damp with the creasote. I get it to the thickness of cream, when I find it fit for use. I find by experience that the longer it stands, the better it becomes fitted for use. When I want to apply it, I take a small piece of cotton, not larger than the head of a pin, and moisten it with the paste. After the cavity is prepared for the paste, I place the little ball in the cavity and secure it firmly with raw cotton. When we have occasion to destroy the nerve of a tooth which *stands alone*, we place a thread over the tooth and around the cotton, so that the pledget will not escape, but when the tooth is supported by others we draw the last part of the pledget of cotton between the tooth we are working upon and the adjoining one. I let the paste remain in the cavity, sometimes thirty hours, sometimes sixty hours, according to circumstances. I allow the paste to permeate the tooth to considerable depth. In some rare cases I have found ten hours long enough. It may, and is often objected to that this process causes the tooth to assume a reddish color; this is often the case when the life of the pulp is not entirely destroyed, but whether the pulp is destroyed or not, when the tooth has this *reddish color*, we open the pulp cavity and wait till the tooth has assumed its natural color before we apply any more of the paste, when, if we find the pulp is actually dead, we remove the dead part.

Now, the reader will notice, that this reddish color will follow with or without the destruction of the pulp. But I have always found in my practice, that I can remove the objectionable appearance by properly opening the pulp cavity. Every dentist of five years experience has seen this reddish appearance where no arsenic has been applied.

In cases where I find that I cannot remove all the pulp the first time, I examine a tooth after the application of the paste; on account of the tender and painful state of the cavity, we apply a small portion of the paste, and bid the patient wait a few days. When the tooth is fit to be plugged, we proceed to the operation.

A MOST REMARKABLE CASE OF REPRODUCTION OF THE LOWER JAW AND TEETH.

BY S. C. COFFIN, M. D., D. D. S., OF MASS.

ED. DENTAL QUARTERLY: *Sir*:—The last copy of your publication I received suggests a case of mine which I will relate. Mr. R. L——, one of the selectmen of our town brought his son to me, saying, “Here, doctor, I have brought my boy to you; I wish you would examine his

mouth and see if you can do anything for him." The lad was about fourteen years of age, of average health, and I learned that he had had one of his second molars extracted two years previously. The extraction had been so bunglingly done that his jaw was fractured, and the result was caries, followed by an offensive discharge. I used all the usual means to cure the little sufferer, but in vain, and finally, with the consent of the parents, proceeded to remove the part. I put the patient under chloroform, and made an incision from the region of the ear, to almost the point of the jaw and removed the bone, and after carefully taking out all the diseased bone, I closed the wound with appropriate sutures, and the parts readily healed. I watched the case with intense interest, and to my great surprise, in six weeks after the operation I saw evidences of an osseous deposit, which increased so kindly and healthfully, that in about eight months the contour of the jaw was restored as if no disease had existed, the cicatrix alone bearing evidence to the mutilation. Engaged in my office duties the operation had almost escaped memory, when one day I saw the boy's mother crossing the street, leading the boy by the hand. She entered my office rapidly, her face radiant with smiles, and said, "doctor, look in Willie's mouth, see if a tooth is not coming." I did as directed, and to my surprise found the first molar emerging from the bed of the gum, and placing my finger upon the alveolus, I could feel the bicuspid also erupting. In this most singular case, fully one-half of the bone, including also the adjacent tissues, of course, was removed.

If you think this case is worthy of being placed before the many readers of the "*Quarterly*," you will so dispose of it.

DENTAL CHEMISTRY.

Chemistry is now recognised as the most useful of sciences. It is a most valuable assistant to men in all occupations above that of the mere hand-laborer. In all the useful arts its worth is acknowledged. To the dentist we may say it is an *essential*; Its knowledge gives him dignity, its possession gives him power. Lying as the dentist's labors do, on the domains of medicine and surgery, how important that he should be able to *prove* by analysis or recomposition whether his work be good or bad, in consonance with, or contrary to, the fixed laws which govern matter, instead of blundering blindly on in ignorance and darkness, wasting weeks in fruitless labor and spending money in vain, when a few rays of light would show the exact position of things. How important that he should be able to assign a *reason* to his customer for all he uses and does!

In his laboratory the dentist finds this science almost as important as his right hand. All he uses and sees ; his gold, silver, tin, lead, zinc, &c., &c. ; his amalgams, crucibles, fires, blow-pipes, &c., &c., are controlled and influenced by laws as certain as day and night. Is it not well to understand those laws ? If our brethren would put the "odds and ends" of time frittered away in lounging or vacuity, to the study of the few plain principles upon which this science is based, what great good would result to the profession and to society !

Chemistry has a more *exact* nomenclature than either of the other divisions of natural philosophy. The correctness of its results, are, therefore, as certainly, if not as easily, arrived at, as a postulate in arithmetic. It is, therefore, eminently mathematical in its nature. Davy wisely says, "Observation, guided by analogy, leads to experiment ; and analogy confirmed by experiment, becomes scientific truth."

Turner states that the word chemistry is of Egyptian origin. In the third century it had the limited sense of teaching the art of making gold and silver. A few centuries later we find the science fallen into the hands of a distinct sect, called alchemists, which is evidently the same word, with the definite Arabian article, *al*, prefixed, making it *alchemist*. The same author defines chemistry to be "the science which treats of those changes in natural bodies which are unaccompanied by sensible motions."

Dr. Henry defines chemistry to be "the description and explanation of the changes of composition that occur among the integrant and constituent parts of different bodies."

Another author gives his definition thus : "Chemistry is that science which takes into consideration the internal structure and composition of bodies, and the relation which these ultimate particles sustain to each other : it makes us acquainted with the action of these particles upon each other, and the laws and results of this action ; an action which takes place only between the particles of different kinds of matter, and at distances so remote as to be entirely insensible, and which always results in the production of compounds possessing new properties."

The most lucid definition of chemistry, in our opinion, is that of a recent author, who, with true American curtness, defines its objects to be, "the investigation of all changes in the constitution of matter, whether effected by heat, mixture, or other means."

The whole earth and all upon it, including its seas, mountains, minerals, animals, and the vast ocean of changing air upon it has been proved to be made up of fifty-four elements, atoms or simples, which we

have not been able, in our present advancement or condition of chemical science, to further divide into smaller elements, or atoms. But it is by no means certain that these so-called "elements" may not, as we advance in knowledge, be shown to be capable of further division. For example, Faraday conjectures from the peculiar action of nitrogen, that it may have a duality of constituents, as well as of effects. Some chemists claim that the list of elements is greater than the number we assign, but we only admit into the "family" of elements, such as have well-determined characters.

PLASTIC MATERIALS USED FOR TEMPORARY FILLINGS.— CEMENTS.—FIRE LUTES, &c.

GUTTA-PERCHA.—For *temporary* fillings gutta-percha has an immense advantage over all other substances in its *durability*, if we except amalgams.

The principal objection, that we hear to its use, comes from practitioners who find difficulty because it clings so tenaciously to the instrument, both in introducing it into the cavity, and in afterwards smoothing it. When left in the cavity till it becomes hardened, it is found so tough that it is almost impossible to trim the edges without entirely displacing it. When the secretions of the mouth have access to it it is found that these difficulties are greatly increased. "Hill's Stopping" and other preparations of the kind, which are made of gutta-percha mixed with siliceous, or some other material which diminishes the cohesion between the particles of the gutta-percha, is desirable on account of the ease with which the material is trimmed off; but is objected to on account of the rapidity with which it is worn off in mastication. The high temperature which is required to soften it, and which makes it so painful to sensitive and exposed nerves is another serious objection to its use.

Another compound for filling is so useful that we give the manner of preparing it :

Take one ounce and a-half of gum elemi, the same of gum sandarach, and three ounces and a-half of prepared gutta-percha, mix them in a glass or porcelain vessel and melt, taking care not to burn the mixture, stirring with a glass rod or clean pine stick. This makes an excellent compound for "fillings" which are only *temporary*. It can be cut from the edges of the cavity without adhering to the instrument. It is also

a most desirable material for sealing up cavities after the introduction of the "paste" which is used for destroying the nerve. Any shade of color can be produced by mixing the different colors of gutta-percha, taking care to select only gutta-percha of the purest quality.

A good cement for making teeth adhere to the plate while securing a fit in the mouth, is made by melting equal parts of good yellow bees-wax, crude turpentine, and gutta-percha. This cement can be easily removed when desired, and is much harder and stronger than ordinary bees-wax.

OXY-CHLORIDE OF ZINC.—This is a useful compound for making paints, cements, fire lutes, &c. As this substance has been highly commended, and considerably used for plugging teeth, we will explain its peculiarities. Its adaptation as a material for plugging depends upon its constituents, *i. e.*, chloride of zinc in solution, and calcined oxide of zinc. These, when mixed, form the plastic paste, which in a few minutes becomes what the renders of it call an *insoluble* compound. And it is insoluble in water, but rapidly and entirely soluble in the secretions of the mouth, and in acetic acid, and in almost all of the other acids, even when very largely diluted. It is of too soft a nature to resist the attrition incident to mastication. We believe, that in many cases, the introduction of this compound is followed by a chemical reaction upon the walls of the cavity, and the adjacent tissues. This combination has certainly too feeble affinities to warrant us in commending it to general use.

TO MAKE FIRE LUTES.—Mix two measures of sand and one measure of feldspar, or equal measures of soapstone and sand, or what is preferable, equal measures of sand, feldspar, and soapstone. These will not shrink; when submitted to a white heat we have found that the soapstone and sand actually expand. These are very useful for repairing breaks, fissures in crucibles, furnaces, muffles, &c. G. R. W.

COMPOSITION PLATES.

W. P. HAYWOOD.

For the benefit of the many inquirers after the manner of using this article, we will proceed to give as minute a description as space will permit.

The working cast should be composed of equal parts of plaster and sand. Proceed with the case same as for rubber, *i. e.*, grind and fit the teeth to the working cast covered with wax the thickness required for the plate; then place two wax sproos, one at each extremity of the wax plate; these sproos or vents should be two inches in length, and one-fourth of an inch in diameter. The whole case should then be

placed in an iron band, shaped like the block letter D, about two inches in height, and large enough in diameter to enclose the case. Fill this band half full of equal parts of plaster and sand, and insert the case, previously soaked in water, in it; then fill up with the investment, and around the wax vents, to the end. The sproos should be at an angle of not less than 45 degrees from the main plate: now, dry the case in the stove, oven, or any convenient place where the heat will not be over 300 deg. Fah., for at least four hours. When perfectly dry blow into one of the vents or spoo holes, and if the air comes out at the opposite spoo freely, then heat up the case in the fire until a piece of the composition metal fuses on its surface; then, having the metal previously fused in a hessian crucible, pour into one spoo until the metal appears at the mouth of the other, then set in a quiet place to cool. Previous to pouring the fused metal the case should be placed in dampened moulding sand to prevent leakage which will sometimes occur. If the metal should blow or boil after pouring, place the case, metal and all, back in the fire until it stops blowing, then fill up with the melted metal, and set aside to cool. It should not be disturbed until it is cool enough to pick up with the naked hands, then place in water, and cut away the investment with a knife. Finish up same as silver plate.

The composition metal used for these plates is a beautiful brilliant white, does not corrode or tarnish, is far superior to silver in every respect. It melts at about 320 deg. Fah. It should not be used except in full under sets. It is too massive for superior sets, and not quite the right tenacity for partial under sets.

If used as recommended for only full under sets, we can safely say it will always please. For sale by Johnson & Lund; price 50 cents per ounce, or \$7 00 per pound.

GIVING 16 CARAT GOLD PLATES THE APPEARANCE OF 18 CARATS.—In the formulæ, I append, I do not want to be understood as friendly to the buying, or *using* gold of so low a relative value as 16 carats. But in the event of any of my professional friends finding a “scraggy” customer in any of the hollow places of the earth, they will find my method of immense advantage. Boil the 16 carat plate in an earthen pipkin, in which you have placed the following ingredients:

Saltpetre $\frac{3}{4}$ ij; Salt $\frac{3}{4}$ i; Alum $\frac{3}{4}$ i; Water $\frac{3}{4}$ iv. Boil till the water is evaporated. Wash the plate in hot water and burnish it. I have, by this process, obtained a most beautiful and rich plate. By adding water to this mixture it can be used many times without being renewed.

TO STOP BLEEDING AFTER EXTRACTION.

MESSRS. EDITORS:—When I have a case of hemorrhagic diathesis and find excessive bleeding follow the extraction of a molar tooth, I have found the best plan I can pursue is the following: When I recognize it as being arterial blood, I immediately remove all the coagulated blood from the cavity, and apply a piece of cotton-wool which has been previously soaked in muriated tincture of iron and tannin and give the case my undivided attention for a few hours. I take care that the stopping is not removed until I am perfectly satisfied that there can be no recurrence of the hemorrhage. When this point is gained, I prescribe this lotion to rinse the mouth, which should be used every 30 minutes:

Half drachm Alum,
Twelve grains Tannin,
Half ounce Tincture Myrrh,
Six ounces Camphor mixture,
Water, one and a half ounces.

I would suggest that every dentist keep this at hand in his office. If this small, but valuable formulæ is, in your judgment, of use, you will publish it in the "QUARTERLY." R. B. D.

NEW ANNEALING PROCESS.

EDS. QUARTERLY—*Gentlemen*:—I enclose the yearly remittance for the "QUARTERLY." If there is anything in any late numbers of your valuable journal in regard to a new cement "filling" lately introduced, or about to be patented, please send me the number. I have been in the habit of annealing in a spirit-flame all the gold I use—both crystal and gold-fold—just previous to introducing it. I find this a great and very material advantage, making it much more tenacious. The structure or fibre is not near so likely to be broken or destroyed under the instrument; and it becomes, also, more capable of being condensed and finished with perfection and much less labor. If you think this idea is of any value to you, or the public, please disseminate it through your pages. It is possible that some may have practiced it previously. None have done so, to my knowledge, in this vicinity.

Yours truly, M. W. PARSONS,

Jan. 14, 1864.

Toulume County, California.

PROCEEDINGS OF THE ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A monthly meeting of this society was held on Tuesday evening, December 1st, 1863, in the Philadelphia Dental College.

Dr. McQuillen, the Corresponding Secretary, presented a communication which he had received a few days before from Dr. J. F. Vegas, a corresponding member of the society, residing in Bahia, Brazil, comprising a translation of an editorial from the *Diaria da Bahia* favoring the establishment of a department devoted to dentistry, in the University of Bahia, together with the application made to the trustees of the institution for the establishment of the department.

Nitrous-oxide being the subject for consideration, was then introduced by Dr. Tees, who exhibited the apparatus he employs, and, describing it, said: This apparatus consists of a retort, a purifier, and a five and a ten-gallon bag. The purifier is a modification of Wolf's bottle, made of tin or galvanized iron, of one-half gallon capacity. The bags are somewhat different from the ordinary India-rubber ones, having muslin or silk linings for the gas to come in contact, thus rendering it pure, and preventing that disagreeable taste so repugnant to many individuals.

As it can be managed by a child after a little instruction, and can be furnished complete for the sum of fifteen dollars, its simplicity and comparative cheapness will recommend it for general use,

Heretofore nitrous oxide gas has been manufactured for practical purposes in a wine barrel, or copper or tin gasometer, holding about forty gallons. Since water absorbs a large amount of the gas, this is not an economical way of making it, and since it is necessary first to fill the barrel with forty gallons of water, it is not at all convenient, unless running water and a sink or bath-tub is at hand.

The gas can be kept in the apparatus for a week or more, but since it can be generated so quickly I can see no especial advantage in this. By having a quart or half-gallon retort, and keeping it always half filled with nitrate of ammonia, so as to present a broad surface for the gas to escape, and keeping the apparatus on a table in the office, (a small-sized table being sufficient,) it can be generated as fast as it is used. The ten-gallon bag can be filled in the morning, and kept filled during the day, in that way being always prepared. If more than that is required for an operation, the small bag can be filled from the larger one, and the latter attached to the purifier to be filled, which can be done by the time the bleeding from the first operation stops. By this means as much gas may be obtained as will be needed, with but little if any extra trouble. As far as my experience goes, both personal and with my patients, it is as good when first manufactured as it is when allowed to stand for any length of time. The gas can be kept for twenty-four hours in one of these bags without being affected by the possible action of *endosmose* and *exosmose*. I think, however, it is more economical to generate it as it is needed.

Prof. Morton said the "rationale" of this arrangement of apparatus is as follows: The gas escaping from the flask is caused to bubble through the water in the second part of the apparatus, in order, first, that it may be cooled and so deposit the steam by which it is accompanied; second, that any free nitric acid which may by chance be present in the salt (nitrate of ammonia) may be absorbed; and third, that any nitric oxide which may by chance be developed by too high a heat, may likewise be removed (by absorption in the water) from the gas.

The vessel in which these actions are carried on is made small, and the amount of water in it is limited, because a small portion is sufficient thoroughly to effect all these objects; while a large quantity would occasion serious loss by absorbing the nitrous oxide produced, of which water will take up three-fourths of its volume. Lastly, the gas is collected and stored in an India-rubber bag in preference to the ordinary pneumatic cistern or gas holder, to avoid this same wasteful result of contact with large quantities of water, which can, it is true, be dispensed with in certain forms of the last mentioned apparatus; but only by a large outlay in the first cost of construction.

The meeting was mainly devoted to the demonstrations of persons under the influence of nitrous oxide. Several present at the meeting inhaled the gas, with quite satisfactory results so far as the control of an operator over his patients was concerned.

A meeting of the society was held on Tuesday evening, January 5th, 1864, at the Philadelphia Dental College. A number of gentlemen were elected, respectively active, corresponding, and honorary members. Dr. Robertson, of Wheeling, W. Va., donated to the library a copy of his work on Extracting Teeth. Prof. Morton presented thirty-four numbers of Silliman's Journal of American Science. Dr. McQuillen announced the death of Dr. H. Leibert, of Norristown, who took a warm interest in the prosperity of this society. Drs. McQuillen, Morton and Ellis were appointed a committee to draft resolutions embodying the feelings of the society, relative to his death.

The following interesting and well written paper was then read by Henry Morton, A. M., Professor of Chemistry in the Philadelphia Dental College:

PHYSIOLOGICAL RELATIONS OF PHOSPHORUS.

If we were required to say, from a general inspection of their properties, which of the elements was least likely to occur in a living, organized body, I think we should not fail to accord this distinction to phosphorus. More poisonous than arsenic, more readily ignited than any other element, bringing corruption into the flesh and decay into the bones of those who often handle it, we might well conclude that the very last substance which could be admitted into the delicate fabric of a living body, was this incendiary, ever ready to fire life's habitation—this poisoner, ever prompt

to slay the spirit dwelling within. Yet this natural conclusion would be utterly false. Phosphorus not only *is found* in organized bodies, but it *abounds* in them. It occurs in almost every part, and especially in the most delicate organs—resides chiefly in the higher orders of animals, and there presents itself in greatest profusion in the brain, and is so important to the well-being of this part that its deficiency implies idiocy, its abundance intellect.

Should we then conclude that nature here violates her general law of using for each work the most fit material? Or rather look further into the properties of phosphorus and the requirements of a living creature, and, by enlarging our knowledge of both, teach ourselves perhaps at last that here, as elsewhere, nature's means have to her ends the closest possible relation of sufficiency and fitness?

This last course we shall pursue, and, in following it out, we shall first inquire what distinguishes an organized being; then, what sort of powers are required in the particles of which such an one is composed; then, how far this substance—phosphorus—fulfils these requirements; and lastly, if any other resembles it, and how far.

We all know that an organized being is distinguished by the possession of a force, which is not heat, nor light, nor electricity, nor gravitation, nor any other of the physicial forces, however closely it may be related to some of them—and we call this force “life.” But here our knowledge almost ends. This life-spirit is the most timid of all the forces. We can capture and imprison the sunbeam in the meshes of the collodion film*—we can shut up the lightning in the Leyden phial†—but when, with the scalpel of the anatomist, we seek to break into the palace of “life” and seize upon its inmate, she flies before us, from tapestried chambered to crimson-lined gallery, and as we follow, still retreats, from room to room, until at last, when we have driven her to her last resort, and hope to make a sure discovery and capture, we find but a soundless, uninhabited, and empty vault—the object of our search has perished or is fled. The life-spirit, like the echo, answers harmoniously, though obscurely, to our *distant* questions, but is mute at our approach. Like the sensitive plant, she shuns the human hand, or like the nautilus, sinks when we draw near, down from the breezy sunlight of life into the dark ocean of death, far beyond our sounding. We must content ourselves, therefore, with only a general knowledge of this life-force, obtained by an observation of the works which she accomplishes.

Taking the simplest case of vital action in the growth of a cell, we find two processes in constant and simultaneous operation; one of assimilation and conversion, by which foreign matter is absorbed and applied to the growth of the cell or its embryo progeny; the other of disintegration or decay, by which the cell gives back to the outer world part of the material it had absorbed, and which is the necessary result,

*In the dry plate process the actinic force SEEMS at least not to be converted into chemical action until the developer is applied. So also in the other examples of “bottled light.”

†Andrew Cross was accustomed to charge his batteries of Leyden jars during a thunder-storm with the LIGHTNING brought into his laboratory by the system of wires running over his estate, and then use the fluid for experiments of deflagration, etc.

or rather, we might say, the supporting cause of the former action, since it is by the destruction and expenditure of force leading to this decay that the first action is accomplished. Both these actions are necessary to the continuance of "life." No vital function, no act of assimilation or growth can go on without its corresponding expenditure and death, and just in proportion to the amount and energy of the manifestations of life will be the extent of this destruction and death.

What is thus true of the simple cell is true of the most elaborately organized creature, whose body is, after all, only a vast aggregation of cells. As you know, in the growth of the human being, cell buds out or bursts out from cell, (varying in character in various parts, but each alike in its history,) and so builds up the body. Thus it is that the coral island grows, the little insect-like cells budding out upon each other until the complete creature—for so we may fairly consider it—stands a beautiful embodiment of its name—*κορη*, girl, *ἁλιος*, of the sea—a sea nymph resting her white feet upon the yellow ocean bed, and wreathing her brow with sea-shells and twining weeds. And so it is with the more curiously constructed body, in which also there must be a constant death as well as an ever-recurring birth. The heart makes no beat which is not the death-stroke of some of its particles—no limb moves but a portion of its muscle dies—no thought passes through the brain that does not bear a death-warrant to some particle of its structure. Not only do we "die daily," but hourly, moment by moment, in part at least of our structure; and strangest of all, we *must* so *die* in order to *live*, for the life-action consists in nothing but this—the constant and constantaneous processes of construction and disintegration. So long as the first predominates, life reigns; when the latter process becomes the more rapid, life vanishes. Having taken this general view of the characteristics of an organized body, let us observe a little more closely the way in which this action of birth and death is conducted.

The nutrition of the cell is the result of a chemical union between inorganic atoms, brought about through the agency of the vital force; the reversal of this, or the solution of this chemical union, constitutes the action of disintegration or decay. The liberated atoms may, and often do, form new combinations among themselves; but this is aside from our present subject, having no connection with the organizing power. To accomplish such actions it is clearly desirable that there should be among the atoms employed some possessed of a power of change, as regards their chemical affinities, a capacity at one time of strongly attracting, and at another time of easily abandoning other substances; of seizing upon foreign matter to supply their growth, and of yielding it in course of their partial or ultimate decay.

Passing now to the particular case of the animal system, we find one of its most important constituents to be its circulating fluid or blood, in which, no less by modern discovery than by inspired teaching, are we led to look especially for the mystic life. Let us see what this fluid is called upon to do, and so, what sort of material it may require for its work. This blood is, first, to nourish and support all parts of the complex fabric. It is to carry to the exhausted muscle, material for its renewal; to the bone, solid stone blocks, for building and for repair; to it the

throat (that lute, whose strings are always being worn out and replaced, yet are never out of tune) looks for its new cords; to it the eye looks for new lenses, and the ear for new fittings for those shell-like chambers in which the nymph of harmony conceals herself. On its crimson tide float ever whole navies of laden argosies, filled with the most various commodities. Food for all tissues, supplies for all organs, materials for all structures, form their various freight. Nor is this duty all. This same current must not only be the bearer of food and raiment to the inhabitants of its shores, but it must also be like the Ganges, their burial-place. It must carry off the dead bodies of those cells which, having done their work, have by and in that very act terminated their existence. As has been beautifully said in this connection: "It must be at once like a fertilizing Nile, strewing life along its shores; and like that same river, when stricken by the rod of Moses, a bloody river of death, hurrying off the carcasses of its dead inhabitants to the sea."

To meet these requirements, as before, we here again need particles of wide, various, and varying affinities; and also, if it may be, some which shall be able to change, from time to time, their own characteristics, so as to present themselves in an agreeable form to many of those organs, which are so greedy each of its own peculiar condiment, so indifferent to that of all others.

Looking at the structure and maintenance of each other part, we see the same demands repeated: from the solid bones, which yet, for all their solidity, are always needing and receiving repair, to the fragile brain, which a touch would destroy, which every thought in part annihilates, and which yet builds fabrics which will outlast the pyramids, the earth, and all but eternity itself.

In all there is the same demand for a material which shall possess powerful and far-reaching affinities; which shall be capable of exciting in two precisely opposite states, as regards these affinities—now hating what it before loved, now abandoning what it before seized, now clinging to what it before rejected; and for one which, by its capacity of more than fabled metamorphosis, may fit itself to the various desires of a hundred strange and eccentric palates.

These being the demands of a material which is to constitute an organized being, let us now see if phosphorus fulfills them.

Has it powerful affinities for a large class of substances? This we can answer by experiment. You know that, as a general rule, substances do not combine in the solid state without intimate mixture; yet so powerful is the affinity of phosphorus to iodine, for example, that even in the solid state, in large lumps, they will combine vigorously, as here, where I throw these fragments of iodine upon this piece of phosphorus, and their combination is so vigorous as to end in combustion.

Here again, observe the dazzling light which accompanies the union of phosphorus with oxygen, and which bears witness to the energy of their affinity. So also is it with all the elements which resemble these, the electro-negative class; phosphorus unites with them all; nor only with these; in the like manner with the very opposite class, the electro-positive elements, such as hydrogen and the metals. Thus, if I throw into this glass of water these fragments of phosphide of calcium, the

phosphorus of the compound will combine with the hydrogen of the water, forming the gas phosphuretted hydrogen, which you recognize by the fact that each bubble as it rises to the surface bursts into flame spontaneously, with the production of a beautiful wreath-like cloud of smoke. Phosphorus, also, as has been said, combines with the metals. We have its compounds with aluminum, calcium, magnesium, lithium, iron, cobalt, tungsten, manganese, copper, lead, and many others, and in time shall probably find that it combines with every element.

We may then most confidently assert that phosphorus fulfills the first of the required conditions, or has powerful and widely extending affinities.

But does it fulfill the second condition, of existing in two opposite states as regards these affinities—one active, the other passive; one of acquisition, the other of abandonment? This question, also, I can answer by experiment. The properties of phosphorus in its ordinary (which is its active) condition are already familiar to you. You know how it fumes and glows in the air; how the least friction, or a little warmth, ignites it; how it is a poison fatal in doses of a couple of grains. Here, however, is a piece of pure phosphorus which does *not* fume or glow in the air; may be *powdered* without igniting; will not take fire until heated to 570° , and has been swallowed in doses of two *ounces* without the remotest ill effect. Its affinities, following them out in detail, are just what this general summary would indicate—feeble, undemonstrative; it combines not at all, or slowly and reluctantly. Yet this is simple and pure phosphorus, and may be converted into the ordinary variety by simply heating it above 570° in some non-combining gas. It is formed by heating ordinary phosphorus for 40 hours to 464° – 482° , in a non-combining gas, by the action of iodine on melted phosphorus, and by the continued action of light on the common form of this element. Here then again our question is affirmatively answered and we see that this substance is capable of two opposite states with respect to its numerous chemical affinities.

In the next place, then, we ask: Is this body capable of great and numerous modifications of form?

Let me again answer this by practical illustration. Here I have a piece of freshly prepared phosphorus of the common form; it is, as you observe, transparent, of a faint yellow-brown color, very much like a piece of dirty glass, with no crystalline structure. Here again is another piece, opaque and white, like white wax; this, however, is also pure phosphorus. Here again is a piece, opaque and black, like plumbago; this also is the same body, pure and uncombined. Here again I have a mass of regular crystals, here a crimson powder, here a metallic lump; each and all being simply phosphorus, and phosphorus alone. Looking at these so different forms, may we not well say that phosphorus is able to change itself to meet the various requirements of many different organs?

Nor does phosphorus in its uncombined condition only exhibit these properties. Its most important compound, phosphoric acid, is similarly well suited to the changing wants of a changing structure. Thus it is capable of three forms. It may be monobasic, combining with and

being neutralized by one equivalent of base ; or it may be bybasic, requiring two equivalents of base to neutralize it ; or it may be tribasic. Thus in the blood of a young growing animal it might, in its last form, take up three equivalents of lime from the nutritive apparatus, convey these to the bones, there deposit two equivalents where they were needed, and return ; yet completely neutralized and deprived of all acid properties (which might seriously injure that fluid) through the circulation, with only one part of the earthy base. This acid is also at once the most powerful and the mildest of acids. It can wring from the fierce oil of vitriol and the violent aqua-fortis, the water which they so long for, and so thirstily swallow ; and yet it may be spread upon the skin without injury. When thrown into water, it at first hisses like hot iron, with the vigor of its combination ; but then, when it has been reduced to the condition of half melted snow, it very slowly dissolves. As the author before quoted has said : "It is like a feverish child that begs for a great big bowl of water, and then just moistens its lips." In fact, this is the very acid of acids for an organized structure.

We may now, I think, admit that phosphorus, in no small degree, fills the demands expressed by organized structures, as regards their elementary materials ; and our last question only remains to be answered, *i. e.* What other element resembles it, and how far ?

The element, beyond question, most closely allied to phosphorus is arsenic. The chemical properties of these substances are indeed wonderfully alike, and many of their compounds are hard to distinguish. The affinities of both have a very wide range, and run in the same direction. They are both poisons, and nearly equal in degree. Both are irritants ; both in medicinal doses are stimulants ; both form garlicky gaseous compounds with hydrogen ; both form acids of three forms, not to mention other points of general and special analogy. But with all this resemblance there is one great point of difference ; a point of vital importance in the present connection. Arsenic *has no amorphous form*. It is no fierce lion, terrible in its native ferocity, yet capable of being tamed, and even domesticated ; but is rather a cruel snake, deaf to all charms, fatal to any bosom that may harbor it. Thus it is evidently unfitted for such an office as that of phosphorus in the animal economy ; and being able to exist only in its active form, can perform only active functions in the organism, and being unable to lie there in a quiescent state, must do some mischief to the structure if introduced in any but minute portions. It has been stated (and in popular works the statement has received extensive circulation) that arsenic may by continuous use become a harmless, or even beneficial element in the human system. Such a statement is, however, without satisfactory circumstantial foundation ; and utterly without support of experiment and observation. The history of this curious error is as follows. In 1854 a certain Dr. Von Tschudi published, in the *Journal de Chimie Medicale*, an account of an alleged habit of eating arsenic, indulged in by the peasants of Styria and Hungary. The poison was stated to be taken in gradually increasing doses, varying from part of a grain to two or three grains, every few days. It was resorted to by the women to improve their complexions, and by the men to increase

their strength. Many strange and pathetic stories, generally without date or location, were added; and it was explained how at last the arsenic-eater must reach a point when to pause, retreat, or advance was alike fatal, for the practice, once established, was a necessity, to abandon it being the occasion of death, with all the symptoms of arsenic poisoning; which, however, did not appear if the dose were regularly taken and regularly increased, ("being graduated according to the *phases of the moon*,) until an amount was reached which must prove a poisonous dose even to an arsenic-eater.

Publicity and authority was first given to this wonderful statement by Prof. Johnston, in his *Chemistry of Common Life*, and from thence it has journeyed far and wide in popular literature.

To most of our readers the "moon phase" of the proposition (Tschudi's own expression) would, we imagine, be conclusive as regards the value of the whole statement. But we may add, that extended medical observation and experiment have proved that the systems of the inhabitants of England and America, so far from accustoming themselves to large doses of arsenic by a gradual increase, become, on the contrary, more and more sensitive to the same, or a diminished dose; so that in medical use the full dose, one-eighth of a grain, should be given at first and then *decreased* if continued.

There is, moreover, reason to suspect that the substance seen in use by Tschudi, if any, was oxide of zinc. The question was revived a few years since, in a lecture delivered in one of the London hospitals, where the lecturer brought forward some letters from a superintendent of mines, and others in Germany, alleging the existence of the practice; but here the evidence proved too much if admitted, for it was distinctly stated that the first dose recommended and taken to begin the progress was of three grains, *a full fatal dose*, in this part of the world at least.

We see, then, that in answer to the demands made by organized structures, phosphorus presents an array of properties wonderfully adapted to such requirements; and that it alone, of all the elements, possesses at once all these needful powers. Seeing, moreover, how large a use is made of this substance in organized creatures, it must be very evident to us that here, as elsewhere in the great workshop of nature, the material employed is the best adapted, as is the tool used the most efficient, for the structure to be produced.

The above was commented upon by Drs. McQuillen, Flagg, Kingsbury and Ellis.

At the close of the discussion Dr. Tees presented for examination an improvement on the ordinary Vulcanizing Flask, made by Dr. Wm. P. Henry; it is designed by means of a hollow screw to allow the surplus rubber to escape, thus preventing the cracking of thin blocks. Drs. Flagg, Gorgas and Tees were appointed a committee to examine and report upon its merits.

Dr. Haywood exhibited an improvement in the Rubber Teeth of Johnson & Lund, for securing blocks to Vulcanite base.

CHEMICAL DEPARTMENT.

BY W. P. HAYWOOD.

PARTING FOR PLASTER CASTS OR MODELS.—Dissolve one ounce of carbonate of potassa (salts of tartar) in one quart of hot water. Cut four ounces of white bar or castile soap in fine shavings and dissolve in one quart of hot water. When the two solutions are quite cold pour them together in a glass jar. If it does not form a jelly in about half a day, cautiously add rain or spring water until it begins to thicken. To be applied to casts well dampened; with a fine brush spread the jelly over the parts to be copied; wash off, and pour the freshly-mixed plaster on the parts. After the plaster sets, soak in water and remove.

IMPROMPTU CORALITE.—Take two parts of Company's hard rubber and one part of gutta percha; mix the two well together in hot water with the hands until all the light streaks disappear; then roll out while hot with a bottle, taking care to have water on the bottle and slab or table, to prevent sticking. This is an excellent article for repairing broken vulcanite plates or for fastening blocks to metallic plates. It takes only half an hour longer to vulcanize than the Company's or Roberts' rubber.

WAX—*To make White from Yellow.*—Old yellow and dirty wax can be made into a beautiful white by the following simple process: For every pound of wax take six gills of cold water; place in an earthen pan; pour in a teaspoonful of strong sulphuric acid; let the heat come up gently until the wax is melted; then increase the heat and let boil one hour. After cooling, remove the scum and dirt on the under surface of the wax, and re-melt with clean water, minus the acid. If the color does not please, a second dose of the same quantity of acid must be administered, and finish up with one or two boilings in clean, soft water.

GOLD PLATES of sixteen carats can be brought up to nineteen carats by boiling in the following mixture:

Saltpetre	-	-	-	-	-	-	-	-	-	3ij.
Salt	-	-	-	-	-	-	-	-	-	3i.
Alum	-	-	-	-	-	-	-	-	-	3i.
Water	-	-	-	-	-	-	-	-	-	3iv.

Mix in an earthen pipkin, and boil until all the water is evaporated; then wash off the plate in hot water and burnish. A beautiful rich plate can be obtained by this process, well repaying the dentist for his trouble. By adding more water to the mixture it can be used several times without renewing.

ZINC.—The zinc of commerce, as the dentists use it, is entirely unfit for the purposes to which it is applied, viz.: for a male die for swagging metallic plates. The impurities of the article as we get it consist of carbon, iron, lead, copper, sulphur, cadmium, and arsenic. It can

be freed from the fixed impurities by redistillation in an iron retort ; by exposing it to a white heat, and rejecting the portions which distil over first, and which contain the cadmium and arsenic, it may be obtained quite pure. It is owing to the presence of these foreign bodies, particularly iron, that common zinc dissolves so rapidly in dilute sulphuric acid ; and all or any of them, when in excess, will increase its tendency to blow when overheated. In melting zinc care should be taken to remove it from the fire before it is all melted. As zinc melts at 773° , any point beyond that would volatilize the cadmium and arsenic, and produce what is technically termed blowing. The arsenic, when forced from another metal at a high heat in the air, always leaves the metal from which it parted more or less oxidized, according to the amount of combination. The bad effects of the sulphur may be somewhat modified by dosing the zinc with lime and pulverized charcoal ; the sulphur combines with the calcium of the lime, the oxygen of which unites with the zinc ; this, again, is decomposed by the charcoal, the oxygen combining with the carbon, and the zinc is left free from the sulphur.

PHILADELPHIA DENTAL COLLEGE.

The first annual commencement of the Philadelphia Dental College was held at Concert Hall, Philadelphia, on the evening of February 29th, at $7\frac{1}{2}$ o'clock.

The degree of Doctor of Dental Surgery was conferred upon the following gentlemen :—Wm. A. Breen, Pennsylvania, Dental Caries ; William P. Henry, Pennsylvania, Mechanical Dentistry ; Richard J. Hoffner, Pennsylvania, Saliva ; Henry E. Knox, Massachusetts, Dental Caries ; William S. Miller, Massachusetts, Vulcanite ; Ambler Tees, Pennsylvania, Nitrous Oxide.

The valedictory address was delivered by Prof. C. A. Kingsbury.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Annual commencement of the Pennsylvania College of Dental Surgery was held at the Musical Fund Hall, on Friday evening, February 26th.

The list of graduates is as follows : P. H. Shoemaker, Abram S. Reber, J. S. Camp, J. W. Vanosten, G. W. Caldwell, Thomas E. Osman, Pennsylvania ; A. O'Callaghan, F. Comas, M. Trujillo, Cuba ; George J. Underwood, New York ; E. C. Baxter, Maine ; Henry Cowie, Michigan ; U. T. Shannon, New Jersey ; S. C. Richardson, Illinois ; J. B. Snow, Connecticut ; George Clark, Vermont ; E. Lafaure, Canada.

The valedictory address was delivered by Prof. George O. Barker.

NOTICES OF BOOKS.

"*Dr. Harris' Principles and Practice of Dental Surgery.*" The first posthumous edition of this work has been issued. It bears evidence of having been faithfully and carefully, as well as intelligently, revised and enlarged by gentlemen every way capable of the high trust so thoughtfully committed to their care by the great "Father of Dental Surgery." It contains over three hundred illustrations, and the letter-press reflects great credit upon the publishers. We find, as *addenda* to this, the eighth edition of "*The Principles and Practice of Dental Surgery,*" a copious and instructive description of the manner of using "Rubber Work," and a summary of important improvements in the treatment of cleft palate. No surgeon or physician now considers his library complete without this edition of Dr. Harris's great work.

We have received a pamphlet entitled "*Dr. Wells, the Discoverer of Anæsthesia; or, 'Who Conquered Pain?'*" It defends the claims of Dr. Wells, of Hartford, Connecticut, (now deceased,) to the discovery of nitrous oxide and ether as anæsthetics, and gives a synopsis of testimony in his favor, with the resolution passed by the General Assembly of Connecticut of May, 1847, acknowledging him as the discoverer, and according to him the high station of a public benefactor. We give our readers the following introduction to this little pamphlet:

Amongst those who have reflected immortal honor on their age and country—those who are entitled to be esteemed benefactors of mankind—is Dr. Horace Wells, a name apparently so little known or so little regarded *now*, notwithstanding the priceless boon he has bestowed upon the human race, that the reflective mind marvels at the stolid ingratitude which has suffered his merits to be eclipsed, and permitted even temporary oblivion to rest upon his great achievements.

The gift thus bestowed upon humanity by Dr. Wells was so wonderful, so priceless, that had pagan Greece or Rome been so beholden to a man, he would have been elevated in their esteem to the rank of their beneficent deities; temples would have been graced with his statutes, and incense burned to signalize the great benefaction. Nay, so startling was his discovery, so far in advance of all others was the good conferred, that only amongst the fables of a heathen mythology or in the marvelous tales of the "*Arabian Nights*" can parallels be found, where one deity or genius bestows beauty, another riches, another immortality, to still the ceaseless cravings and complainings of the human race.

That marvelous gift to life was "*Immunity from Pain.*" Yes, the body of man, a bundle of nerves at the best, was to arrive at a period in its history when even the hacking knife and grating saw of the surgeon might be smiled upon by the patient himself as diseased limbs and

flesh were cut asunder. Yet, while monarchs and learned academicians exulted over the invaluable benefit—while the “groaning” hospital relapsed into silence and repose before its benign approach—the great discoverer of the godlike boon was suffered to sink almost friendless and unregarded to a premature grave.

Can this be so? Is it true that in an enlightened age and amongst enlightened nations such a man should have been suffered to live almost unregarded and to perish comparatively unknown? Have the cries and shrieks of pain from battle-fields and hospitals died out in eternal silence under the influence of this discovery, while he breathed his last in neglect and sorrow, and does no statue of the immortal benefactor grace vestibule or place? Can lying impostors and charlatans appropriate his honors, and, denying his merits, grasp undeserved rewards from the blinded multitude of even philosophers, statesmen, and men of science? Dead, like the great philosopher, Sir Humphrey Davy, as the consequence of pursuing too far his own discoveries—devoured, like the fabled Actæon, by his own hounds—let the world *now* come forward and do deserved, albeit tardy, justice to his merits and his memory.

Reminded once more of injustice to him by late accounts of military hospital practice on the great battle-fields of Italy—Montebello, Magenta, and Solferino—if we would finally vindicate his claims to the memory of a public benefactor, action can no longer be delayed, because, a few more years sped, and the host of unimpeachable living witnesses will be gone from the stage of action, leaving to another generation the performance of a sacred duty—a duty which fairly belongs to the present.

VARIEITIES.

WHEN is a tooth, not a tooth? When it is a-king.

BE careful of your table talk. Do all your biting at table in biting your food. Don't be biting in your remarks.

THE effect of habit is seen in the muscles of expression, as those of the face are called; though at times every muscle of the body exhibits the fervour of the mind. Almost any state of mind will, from habit, exhibit itself in the constant action of certain muscles even when this is not desired, indeed when a strong effort is made to prevent it. The miser, who spends his time at home in counting his money, will betray his avarice in his face even when dropping his hypocritical alms in the church box.

In the mucus membrane of the mouth there is no coloring matter. Hence the blood of the skin gives it a red appearance, and the brightness or paleness of the red, indicates the health of the system in many cases.

GLANDS are for the purpose of presenting a great extent of surface in a small space. A gland is nothing more than a tube with a great many branches, about which there is an infinite number of cryptæ, and thus an immense extent of surface maintained. There is a great multitude of blood vessels about the sides of these tubes, and a circulation of a great quantity of blood from which the fluid of the gland may be formed. There are nerves connecting between the gland and the mind, when the mind thinks of any delicious food the saliva is rapidly formed. There is also a connection between the gland and the organic nervous system, causing an increased circulation of blood when eating,—requisite for the flow of saliva.

INSTRUMENTS can be hardened after they are perfectly shaped by heating them a little in the flame of a spirit lamp, covering the point with soap, heating to redness with the flame of a spirit lamp blown upon charcoal, and dipping the instrument in cold water, when it will be too hard for use. It may be tempered by placing the point against a large piece of polished iron, and heating the shaft of the instrument in the flame of a spirit lamp until the point becomes a deep blue, and afterwards a straw or copper-color.

NEURALGIA of the jaw, cheek, and across the forehead, is frequently the result of general debility of the system and anæmia. When there is any indication of anæmia, it is always well to give some preparation of Iron; Prussiate of Iron, or Phosphate of Iron are generally to be preferred, but others are frequently used. Along with the Iron, a tonic is usually also required Hydrastis Canadensis, in powder or infusion, is very good.

A new material has been produced by a Birmingham (Eng.) manufacturer, which, it is said, is likely to enter to a considerable extent into the manufacture of many articles in the hardware and cutlery line. This material consists of mineral, earthy, arenaceous, or other substances, including animal shells of all kinds, as pearl or oyster, glass, pebbles, marble, slate ballast or slag. These are powdered or amalgamated into a paste under a great heat. In this state the material as a plastic composition, is capable of a very extended application to the fine arts. It can be readily transferred to dies, and will receive the sharpest impression. It can be made of any color or shade that may be desired and is likewise susceptible of the highest degree of polish.

THE nerves are white, pulpy cords, reaching from the brain and spinal cord to every muscle of the body. If minutely examined every nerve is found to be composed, like a skein of silk, of threads, each of which might with propriety be called a nerve, but is usually called a nervous filament. The filaments are extremely minute, being finer than the finest thread of the spider. The general neurilema or nerve sheath envelops the filaments of the trunk and branches as the bark of a leafless tree envelops the wood. An inflammation of this sheath or membrane, is supposed by some to be the disease, neuralgia; but it is certain that other conditions also produce that painful complaint.

Dyspepsia's pangs, that rack and grind
The body and depress the mind ;
Agonies, that, as they go and come,
Make life a constant martyrdom ;
Colics and dysenteric pains,
'Neath which the strong man's vigor wanes ;
Bilious complaints—those tedious ills,
Ne'er conquered yet by drastic pills ;
Dread diarrhea, that cannot be
Cured by destructive Mercury ;
Slow constitutional decay,
That brings death nearer day by day ;
Nervous prostration, mental gloom,
Heralds of madness or the tomb ;
Throbs and pangs of dread Neuralgia
All spring from one—Odontalgia.

TOBACCO is said by some to prevent the teeth from aching and decaying. It does the first by producing such a state of the nerves that they have not the power to produce sensation, but the tooth continues to decay nevertheless. Therefore the tobacco is doubly injurious, it increases the decay of the teeth, while at the same time it does not allow its ravages to be made known to the mind.

IF any state of the nerves producing pain can be changed without doing decided injury, it should be done ; not more for the purpose of preventing pain, than for preventing the farther progress of disease.

TIN occurs as an oxide in England, Mexico, Germany and the East Indies. It may be reduced by the action of charcoal at a high temperature. It is found in commerce under two forms, block tin and grain tin. If a bar of tin is heated, the purer parts, being the more fusible, ooze out of it, constituting grain tin, and the mass which is left behind is block tin. It is a white metal like silver. It oxydizes in the air superficially, the action ceasing as soon as a thin crust is formed. At a red heat it oxydizes rapidly, forming *putty powder*, used for polishing metals. It is very malleable. It melts at 442° and burns when raised to a high temperature in the air.

GOLD may be obtained pure by dissolving standard gold in nitromuriatic acid, evaporating the solution to dryness, re-dissolving the dry mass in distilled water, filtering and adding to it a solution of protosulphurate of iron ; a black powder falls, which, after being washed with dilute muriatic acid and distilled water, affords on fusion a button of pure gold.

ITEMS.

TO ANXIOUS INQUIRERS.—M. W. P., Tuolumne, Cal. If you will give us more details in reference to your "cement" we will attempt to give you the *exact* formulæ. There are many "cements." The one to which you allude, is not in our pages. Neither pains nor labor will be spared in this most pleasant task of giving information to our friends through the medium of our columns.

EDS. QUAR.

The *Dental Times* of January, maintains the character gained by the preceding numbers. If we may be permitted to carp, we might hint that some of the learned contributions to the *Times*, are a little diffuse in their instructions. We also complain of missing the excellent little monographs of our friends Parrish and Harvey. The *Times*, as every body knows, is the product of the community of effort, made by the institution which publishes it—it is therefore *ex cathedra*, in its views. We believe it is the first time that a dental school has attempted to maintain a journal—if we except a two-page hebdomadal in the West. Well, "in the multitude of counsellors there is safety"—*for the physicians!* The child with so many "fathers" rarely sees more than foetal life. We dislike to see the current of usefulness of these laborious and humanitarian gentlemen, confined to the narrow walls of one institution.


W.

COMFORTING TO FEEBLE SUFFERERS.—Let no one complain of the status of dentistry. W. H. A., writing on Dental Physiology, says: "He who has never suffered a twinge of pain knows nothing of the value of immunity therefrom, and he is proved to be much the inferior of the feeble sufferer, who has been crucified again and again in the furnaces of pathological experiences." Now this is blooming physiology! "*Crucified* in the *furnaces* of pathological experiences!" We have read that sentence many times. We like to read it. "*Crucified* in the *furnaces*" is good—but not satisfied with this most singular metaphor, he tells us that the "feeble sufferer" was crucified "*again and again* in the furnaces." Oh dreadful! "Feeble sufferer," too! But we feel better, for he tells us that, "we may say he who has never known other than purely physiological states of mind and body, is a novice, and really more intensely demands our condolence and sympathy than those who have passed the baptism of frequent crucifixions of the affections and tortures of physical suffering." W. H. A., is, plainly, a "pious character." He assures us that the "feeble sufferer who has

been crucified again and again in the furnaces, &c.," has passed the baptism of frequent crucifixions." He was baptised, was he? It is well the "feeble sufferer" *was* baptised after being *crucified* in the *furnaces*, and having "frequent crucifixions of the affections and tortures of physical suffering." We feel comforted that the "feeble sufferer" was baptised before he "went up," though we have a lingering and painful doubt whether it might not have been the "tortures of physical suffering," and not the "feeble sufferer" that received the holy rite. *Luciferous as Mud!* Nobody disputes the premises in this sentence, that is—that the man who is diseased, body, limb, and brain, and whose mind is overcast with clouds, the result of the disease, is happier than the person whose harmoniously arranged nerves, membranes and encephalon make labor pastime, sleep sweet, and earth a paradise!

Here follows a paragraph which blinds us:

"It is next thing to impossible to confine ourselves to an undisturbed functional activity, or purely antegrade physiological role of organic movement; seeing that the dark back ground of departure therefrom so environs us on all sides that the antithesis is ever with us in either latent or active state." But he kindly adds: "Having premised then, that all our physiology on this planet, is but a higher or less divergent pathology, the light begins to break in upon us." It does? "Light begins to break in upon *you*!" Indeed! "Breaks in on *you*!" *But what do you suppose we are going to do?* W.

 The *continuous circulation* of the "QUARTERLY" is now over FOUR THOUSAND COPIES!!! which is, we believe, considerably greater than that of any other periodical devoted to our speciality: thus offering to those who have valuable "ideas," or improvements, the very best medium for communication with the dental public, and others.

INVENTORS and ADVERTISERS are reminded that our "Subscription List" is carefully and thoroughly revised every few months, which enables those who make the pages of the "QUARTERLY" their media for advertising to place their discoveries and commodities *directly* in the hands of the reader and purchaser.

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THE DENTAL QUARTERLY.

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No. 2.

HAS AGE ANYTHING TO DO WITH IMMEDIATE SUCCESS?

Great expectations are entertained by nearly all professional men, when first entering upon the chosen duties of life. There are but few who have not a goodly amount of ambition, and none who are not buoyant with hope. In the spring time of life, everything seems promising, and the darkest hour is lit by the light of faith. But unfortunately for him who has not "dividends" to look to, "Hope deferred maketh the heart sick," and the cure for that heart-sickness is too often sought for, by young men of much promise and no ordinary attainments, in more remunerative occupations. Our observation and experience have led us to the belief, that *youth* is an obstacle, to surmount which it is necessary to call in the aid of a great many friendly influences.

In spite of the "*Omnibus ad quos præsentēs Literæ pervenerient Salutem,*" &c., the young dentist too has this angel-ogre to combat—his advancement in the Science alone being insufficient to gain the victory for him; and the instances are but too few, where sufficient force can be brought to bear upon the source of trouble to entirely clear the way. The wages of a mechanical dentist is much too small to support him with any kind of decency; laboring men and mechanics receive more, and even were it ample, the position alone would debar him from receiving the greater part of the patronage of his friends.

How then must reform begin in this respect? All who have noticed the comparative ease with which a middle aged person, coming from another occupation gains a practice, will not be at loss to suggest the way; age here is sufficient help and defence, at least for a while, if the reputation should be lost by miserable operations. The intelligent and discriminating public are too much wrapped up in the belief that age and experience are synonymous terms, not to give him encouragement—

and while his young friend is struggling on, unknown and uncared for, he, perhaps, is "all the rage."

It would be well, therefore, for a young man, looking forward to becoming a dentist, to take this matter into consideration, and not to be in too much of a hurry to "nail up his shingle." Unless otherwise provided for, a healthful business admitting of fresh air and out-door exercise should be engaged in, and he should train himself in a physical point of view for the contemplated avocation. A cricket club should be joined, the muscles brought out, the gloves handled, and instead of wholly spending the evenings at the theatres and places of amusement, the gymnasium should be resorted to, with a due regard to the privileges extended by debating and dental societies. A good physical training thus obtained, the mind and muscle will be more capable of performing their respective duties at the operating chair, in the laboratory, and in social intercourse with patients and friends. When from twenty-four to twenty-six years of age, it will be time enough to engage with a good operator. By assiduously devoting the time to study and practice in the operative and mechanical department for a period of two and a-half or three years and finishing off with a complete course at a medical college, and the same at a dental college, at the age of twenty-seven or twenty-nine years, much valuable time would be saved, and a thorough education obtained. Starting thus with a vigorous manhood and by the aid of the many friends, in the meantime gained, he would be enabled, successfully, in a very short time, to obtain and maintain an honorable position and a respectable practice.

A. T.

SPONGY GUMS.

BY DR. J. T. ABBETT, FABIVS, N. Y.

Several writers have argued the impropriety of inserting a full set of upper teeth, without supplying substitutes for absent inferior bicusped and molars. The result of neglect in this particular being an absorption of the superior alveolus in front; the gums assuming a soft, spongy appearance, it being impossible to keep the plate in place.

I have a case in hand.—Patient 48 years of age; the inferior incisors and cuspidati alone remain in the mouth; all the rest of the teeth have been extracted. About thirteen years ago he had an upper set of teeth inserted on silver; he has worn them with only partial success; for two or three years he managed to masticate with them; since that time

he has not been able to keep them in place, on account of the absorption of the alveolus and softening of the gums. Antagonists for the bicuspid and molars being wanting, the repeated use of the front teeth for biting and chewing has been the cause of the trouble.

To remedy this, I shall extract the inferior incisors and cuspidati, since they cannot be saved, and insert a full upper and lower set on rubber base. By scraping or cutting the plaster model, I shall be enabled to make the plate press harder on the absorbed and spongy parts. I shall also make the air chamber as large and deep as the case will admit of, leaving the edges sharp and well defined.

OIL OF CLOVES.

This oil, from the fact of its being a powerful irritant, is very effectual, when properly applied in relieving toothache arising from exposed or nearly exposed pulp. Children as a general thing, are unwilling to submit calmly to any lengthy operation, hence the difficulty of properly treating the fangs, and filling pulp cavity and crown. If the nerve is destroyed and allowed to remain in the tooth, continued alveolar abscess, with its attendant anxiety and pain to parent and child, is the result, and ten chances to one, the tooth is sacrificed before its time. By means of this useful oil, however, we truly believe that the jumping, thumping, and excited nerve, so ruthlessly tormenting the little innocent can be so patted, coaxed and brought under control every three or six months, that it will be content to remain quietly buried alive in its little bony sepulchre, until nature is ready to dispense with its services. It is true that there is a mistaken prejudice against its use by profession and people, and we have not unfrequently heard it said, "I have put oil of cloves so much in my teeth that it has completely ruined them;" but in nearly every instance such expressions come from the lips of such an one who likewise says, "I don't believe in having teeth filled, and when *my* teeth ache, out they must come!"

Until recently the same erroneous idea has prevailed in relation to creasote, and we have seen the testimony of a dental college professor, condemning its use as an obtunder of sensitive dentine, on the ground that it hurries on the decay. But more sensible opinions are emanating from those high in authority, since we find them recommending the washing of the dentine with creasote immediately before filling as a means of preventing further decay.

Cloves are the unexpanded flowers of one of the most beautiful small trees growing in the islands of India. The leaves, which are about four inches by two, when bruised are very fragrant. The tree is always green, bearing at all seasons of the year, beautiful rosy flowers. It was formerly confined to the Molucca Islands. The Dutch in accordance with their monopolizing policy, caused it to be extirpated, except in two islands under their immediate inspection. It was afterwards, however, introduced into certain French colonies, also, into Cayenne, West Indies, Sumatra and Zanzibar, in which places it is now cultivated largely.

Cloves were unknown to the Ancients. They have a hot, pungent and aromatic taste. They act less upon the system at large, than upon the parts to which they are immediately applied, sometime given to relieve nausea and vomiting, and to excite languid digestion.

The oil is obtained by distilling cloves with water, common salt being added to raise the temperature of ebullition. Oil of cloves formerly came from Holland and the East Indies, but since the introduction of Cayenne cloves, the distillation is carried on profitably in this country, when recently distilled it is clear and colorless, but becomes yellow by exposure. It has the odor of cloves and a hot aromatic taste; when pure it sinks in distilled water. According to Ettling, it consists of two distinct oils, which can be obtained separate, being light oil of cloves and heavy oil of cloves. Oil of cloves is commonly used as a corrigent of other medicines, and when mixed with creasote, takes away, without injuring its properties, the disagreeable taste and smell of the latter. A. T.

ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A meeting of the Society was held on Tuesday evening, March 1st, 1864. Several letters were received with books for the library. A vote of thanks was tendered to the gentlemen donors, for the liberality and interest manifested by them toward the Society. An address was then delivered on

"ANATOMY AND PHYSIOLOGY OF EXPRESSION,"

BY J. H. M'QUILLEN, D. D. S.

Gentlemen:—As the essayist of the evening, having no paper ready to present, my remarks of necessity will be of an oral character. The subject I have selected for your consideration is one which should, and more or less actually does, interest everybody; for although on the part of the many there may not be a recognition of the fact, every one is somewhat of a physiognomist; or, in other words, intuitively seeks within the few square inches of the "human face divine,"

to discover the mental and social qualities and past experiences of those with whom he is brought in contact, by the relations of business or pleasure. And there the indelible record is made of the mental training, the high and ennobling, or the low and degrading association, and the joys and sorrows each individual being has experienced. Erroneous estimates may be, and frequently are made by the most acute observer, but this is no evidence that the most legible and unmistakable record was not presented in each instance. An opinion of any value is not to be formed by carelessly and indifferently observing the features when in *repose*, or *noting a few changing expressions*; but by a careful and philosophical examination under *all their varying and chameleon-like* forms. A false estimate of character may sometimes be due to the fact that the opportunities and circumstances attending the examination have not been of such a nature as to disclose all the face was capable of revealing; for as a *single word* often gives a clear insight of the life and animus of an individual, so a *single look*, indicative of love or hate, hope or despair, will reveal traits of character which the individual fully recognizes the possession of, and studiously endeavors to conceal from the observation of the world.

Aside from this general interest shared by all in the human face, it is important that those engaged in certain departments of life should become thoroughly acquainted with the mechanism, so to speak, by which the record is made. To the speaker, whether in the pulpit, at the bar, or on the stage, *gesture* is all-important; to the artist, whether as a painter or sculptor, *expression* is everything; and last, though not least, to the dentist a faithful discharge of duty demands that he should, in the performance of his operations on the teeth, invariably endeavor to *preserve* the natural expression of the face, or when the ravages of decay have eventuated in the loss of the dental organs, that the lost expression should be *restored* by the introduction of properly constructed and adapted artificial substitutes. To each and all of these, and particularly to the latter, if they desire to attain the highest possible point of excellence, an intimate acquaintance with the ANATOMY AND PHYSIOLOGY OF EXPRESSION is indispensable. In the brief space allotted to me this evening, little more can be done than to offer, in a general manner, the groundwork on which such an interesting and extended study rests. It would require many evenings, and fill a large sized volume, to do full justice to the theme. With this understanding, permit me in the first place to direct your attention to the main characteristics of the bony framework on which the features rest, for in the language of Tennyson,—

"Every face, however full,
Padded round with flesh and fat,
Is but modeled on a skull."

The roundness and fullness of some faces, the sharp and pinched up appearance, or the long and heavy expressions of others, is mainly due to the shape and size of the bones on which the features are moulded. In illustration of this, you see on the table a number of craniæ, ranging from the earliest period of infancy to childhood, adolescence, manhood, and extreme old age; and in addition, others belonging to different races,

each and all indicating, in a marked degree, the characteristic differences just referred to. In this, for instance, the skull of an infant a month or so after birth, all that portion which contained the brain is relatively large, with a full forehead, but rather flat at the eyebrows, while the bones of the face are diminutive, and their external surface smooth and rounded; no great prominences and depressions, with the exception of the orbital cavities, are presented, and everything contributes to give the plump and meaningless expression characteristic of an infantile face while in repose. Passing to another skull belonging to a child *æt.* six, the bones of the face are found largely increased in size, and this, along with the presence of the deciduous teeth, serves to lengthen the face, and make it less round than that of the infant. The gradual but marked increase of size in the superior maxillæ presented in these skulls, as we pass from infancy to childhood, from childhood to adolescence, and from adolescence to manhood, is accompanied by a proportionate enlargement of the Antrum Highmorianum: at the same time, as the centre bones of the face, their growth has the effect of increasing the length and prominence of the nasal and malar, or cheek bones. The presence of the large permanent teeth of the adult, and the alveolar processes which support and fix them, serve also to increase the length, breadth, and depth of the superior and inferior maxillæ; and the entire face consequently becomes larger and longer, but not necessarily fuller. In the great majority of cases, indeed, along with the increased size and lengthened visage, there is a decided and proportionate loss of the roundness and fullness presented in the infantile period. The reason for this is obvious, when observing the great prominence of the nasal and malar bones, and the corresponding depression in the other parts of the face, particularly the canine fossæ of the superior maxilla. In life, when these depressions are not well "padded round with fat," the cheeks of course present a wan and sunken appearance. In the series here presented, while the bones of the face have gradually increased in size, those of the cranium have maintained a proportionate relation. This prominent ridge in particular, (the supra-orbital,) in the frontal bone of this very fine and perfect adult skull, and which has much to do with expression, is owing to the gradual separation of the external and internal plates of the os-frontis at this point, so as to form the frontal sinus. On this ridge the eyebrows rest, although they are usually described as resting on the superciliary ridge; but this is not correct.

It is generally conceded that the proportionate relation of the bones of the face to those of the cranium has much to do with the moral and mental qualities of the individual; in other words, that a high order of intellect is usually manifested by those in whom the cranium is large, the forehead broad and high, and the bones of the face small; while the animal propensities are generally evinced in a marked degree, and preponderate over the intellectual in those with depressed foreheads, compressed temples, and large and massive jaws, as in the case of this eminently prognathian skull of an African, with whose antecedents I was made acquainted by the gentleman who presented the specimen to me. The record in his case is in full confirmation of the position just advanced.

The opposite extreme is sometimes presented, in which the bones of the face are disproportionately small, in comparison with the cranium, as to constitute a marked deformity. Again, a want of harmony between the different bones of the face is occasionally presented; as for instance, when the inferior maxilla is very large and massive, or unusually small, in comparison with the superior maxilla, or vice versa. This hypertrophied or atrophied condition may occur in any of the bones, and of course when existing will mar the harmony of the surrounding parts.

In extreme old age, the atrophied condition of the jaws (markedly manifest in this skull, belonging to a very old person) due to the gradual loss of all the teeth, and the absorption of the alveolar processes, produces that decided alteration in the features of the aged with which we are all so familiar. The change which invariably takes place in the angle of the lower jaw in consequence of the disappearance of the teeth and processes, causes the chin to project, and when the jaws are closed the nose and chin approximate each other. Even when apart, the falling in of the lips so encroaches upon the oral cavity as to make it too small for the tongue, and thus renders the speech feeble and indistinct. It is here where the skill of the mechanical dentist finds a field for artistic labor, not only by replacing the lost expression of the face, but also by restoring the medium through which the wants and thoughts of the individual are made known to others.

Arising from various parts of the bony framework, and then mainly converging to one or the other of the two great centres of expression, the eyes and mouth, there are a number of muscles on whose action the varying play of the features depends. Intending by no means to give, at this time, a lengthy and detailed description of these muscles, but rather to notice them casually, with the aid of the drawing, and the large papier-mache manikin here presented, I hope to make myself clearly understood.

While the muscles already described as the superficial muscles of the face are mainly concerned in the varying expressions of the countenance, it must be remembered that those deep-seated muscles, the temporal, masseter, and external and internal pterygoid, which are the active agents in the comminution of food, sometimes play an important part in expression. This is markedly manifest in the aged after the loss of the dental organs, with whom the shortening of the face, the protrusion of the jaw, and the approximation of the nose and chin, under such circumstances, is due to the contraction of these muscles and the influence which they exert in modifying the shape of the lower jaw, by altering the angle which the *ramus* forms with the body of the bone in early manhood. Considerations such as these indicate the propriety of a brief description of these muscles, in connection with the subject under consideration. The first of these,

The *Temporalis*, arises from the entire temporal fossæ and forms a broad, radiating muscle whose fibres, as they descend, converge into a flat tendon which is inserted into the inner surface of the coronoid process of the lower jaw. *Function.* It raises the lower jaw.

The *Masseter* is a quadrilateral-shaped muscle, and arises from the

malar process of the superior maxillæ and the zygomatic arch, and is inserted into the posterior third of the outer surface of the body of the lower jaw, and the ramus from the coronoid process to the angle. It has two planes of fibres, superficial and deep. The first pass downward and backward, the second downward and forward. *Function.* It draws the lower jaw upward and forward, or upward and backward.

The *Pterygoideus Externus*, arises by two heads from the pterygoid ridge of the great ala of the sphenoid bone, the outer surface of the external plate of the pterygoid process, and part of the tuberosity of the palate bone; and its fibres passes horizontally backward and outward, to be inserted into the neck of the condyle of the lower jaw. *Function.* When the two muscles act together they draw the inferior maxillæ directly forward, so as to make the lower front teeth project beyond those of the upper. The protrusion of the chin in those who have lost their teeth is greatly due to this fact. The lateral sliding motion of the lower jaw in mastication is effected by the alternate contraction of the muscles of the right and left sides.

The *Pterygoideus Internus*, like the masseter, is quadrilateral in form, and arises from the pterygoid fossa of the sphenoid and the tuberosity of the palate bones; its fibres pass outward, downward and backward, to be inserted into the inner surface of the ramus and angle of the lower jaw. *Function.* It draws the lower jaw upward, and, from the obliquity of its fibres, also assists the pterygoideus externus in carrying the jaw forward and from side to side.

There are other muscles, in addition to those just described, which are somewhat concerned in expression. Among these are the depressors of the lower jaw and the other muscles of the neck, by means of which the head is thrown into various positions, under the influence of the different passions; but it would be foreign to the subject to present even a brief description of them. It is proper, however, to refer to the ocular group of muscles, for the eye is not only one of the most prominent features of the face, but also one of the most expressive. When the rest of the face is so completely under the control of the will that it is impossible to determine what is passing in the mind of another, the eye frequently reveals everything. So true is this that, when the tongue says one thing and the eye another, men of observation and experience invariably believe the latter. It is the position of the organ, whether in the sidelong, upward, or downward glance; the fixed, prolonged gaze, or the restless, roving motion, that serves as a key, unlocking to the mind to the attentive observer that which another is striving to conceal. The muscles by which these varied movements of the organ are affected are six in number, and consist of two groups, the first of which are four straight muscles, the *Rectus Superior*, *Inferior*, *Externus* and *Internus*; the second group is formed by two oblique muscles, the *Obliquus Superior* and *Inferior*. In addition to moving the eye upward and downward and from side to side, if all the muscles of either group act together, a retraction of the eyeball is induced by the contraction of the *Recti*, or a protrusion of the ball by similar action on the part of the oblique. Squinting or strabismus, either convergent, looking inward, or divergent, looking outward,

which gives such a peculiar expression to the face, is due to a want of harmonious action in the ocular group, and may be caused by overaction or paralysis of a muscle from cerebral disturbance; or it may be the result of imitation. The *Levator Palpebra*, which is included in this group, is the elevator of the eyelid.

The muscles described, like the bony framework on which they rest, would be without motion but for their connection with the brain, through the medium of special nerves, whose function is to give to the various parts of the face that vitality and ever-changing expression which constitutes the charming attraction of the human face.

Of the twelve pair of cranial nerves, five pair are concerned in expression, and three of them are distributed to and give motion to the muscles of the eye. Thus the *third pair of nerves*, or the *motor oculi*, sends branches to all of these muscles, with the exception of the motor externus and the obliquus superior, to the first of which pass the *fourth pair*, or *motor externus nerve*, and the second is connected with the *sixth pair*, or *Nervous Pathetici*.

The *fifth and seventh pair* of nerves are distributed to the muscles of the face; the latter also named *portio dura*, or *facial*, emerges from the stylo-mastoid foramen, and then, passing through the parotid gland, is eventually distributed *exclusively* to the superficial muscles in the form of a plexus, named *pes anserenus*. It is purely a motor nerve, upon the integrity of which the expression of the countenance and the varied play of the features depend. This has been demonstrated in the most satisfactory manner by experiments on animals and in pathological conditions in man. Strange as it may appear now, it was formerly supposed that the painful affection the *tic douloureux* was seated in this nerve, and resection of it at the stylo-mastoid foramen was frequently performed for the relief of patients, but with no other result than inducing paralysis of the superficial muscles and loss of expression on the side of the face operated upon, the patients being unable to close the eyelid, elevate the ala nasi, or move the cheek or that side of the lips, and yet at the same time still suffering as much from the disease. Paralysis of this nerve is sometimes induced by cerebral disturbance or the presence of a tumor beneath the ear and is usually denominated Bell's Palsy, on account of the true nature of the affection having been made known by Sir Charles Bell to whose genius and laborious experimental research the world is greatly indebted, not only for their knowledge of this disease, but also for much that is known at present of the nervous system. Paralysis of the *Portio Dura* does not effect in the slightest degree the function of temporal masseter or pterygoid muscles, (and therefore interfere with mastication,) as they derive their nerve force from the *motor branch* of the *fifth pair*. The dependency of these muscles on the motor branch of the fifth can be readily demonstrated by division of the nerve on each side in animals, when the lower jaw at once falls, and the subject operated upon is rendered incapable of raising the jaw or masticating its food. If the nerve of one side only is cut, the parallelism of the jaw is destroyed; or, in other words, the muscles of the side operated upon being paralyzed, fail to bring the jaw in contact with the upper, while on the sound side it is effected as usual.

Premising that sufficient has been said with regard to the points already touched upon, we will now pass to the consideration of some of the expressions presented by the countenance when under the influences of the different passions that effect the mind of man. It is impossible to describe all of these ; and the attempt, at best, in the consideration of those to which your attention will be directed, must of necessity be merely suggestive to you of an interesting and instructive subject of study, which for years has more or less intuitively engaged my attention : whether when in conversation with others, quietly observing them when engaged in the pursuit of business or pleasure ; or watching the delineations of the orator, the actor, the artist ; and last, though not least, the truthful revelations of the photograph.

In illustration of this part of the subject, I shall employ a number of drawings, here presented, portraying the different expressions, which are faithful copies of the admirable engravings in Sir Charles Bell's work on the Anatomy and Philosophy of Expression, and to whose eloquent descriptions I not only cordially acknowledge the pleasure derived from their perusal, but also that in the following remarks shall be most happy if I succeed in presenting a fair synopsis of his extended description of the subject in connection with my own observations and thoughts.

All the facial expressions may be classified under two heads—the exhilarating and the depressing ; and the angle of the mouth and the inner extremities of the eyebrows as points where a number of muscles center are the most movable part of the face, and on whose changes expression chiefly depend. No better illustration of this fact can be afforded than in the caricature, with which every one is familiar, representing two faces joined together, in one of which the *elevation* of the angles of the mouth gives a most joyous expression to the face ; on reversing or turning the picture upside down, however, depression of the same mouth at the angles produces a correspondingly despondent expression in the other face.

Commencing with *laughter*, you will observe in this picture that the various muscles which have been described as inserted in the *orbicularis oris*, have entirely overcome the action of that muscle whose function is to close the lips. When a ludicrous idea enters the mind, as a general thing it is in vain to try to keep the mouth closed. The antagonistic muscles centering there exert a force beyond all control, and frequently the more determined the effort not to give way to the inclination, the more marked and explosive eventually becomes the demonstration. The *elevator* muscles, inserted in the upper lip and the angles of the mouth as the active agents in drawing the mouth upward, produce a fullness of the cheeks which, pressing upon the lower eyelids, throws the skin into wrinkles under them. At the same time the teeth are exposed ; while by the contraction of the *orbicularis palpebrarum* the eyes are almost concealed, and, by compression of the lachrymal gland, frequently suffused with tears. Together with this, the agitation of the muscles of the throat, neck, chest, and diaphragm produce audible cachinations.

In the reverse of this, or *weeping*, the lips are drawn apart by the converging muscles, but in place of the elevation of the corners of the mouth

they are now drawn downward by the *depressor angulioris*; the nostrils, at the same time, are dilated, and the tears flow profusely from under the convulsively-closed eyelids over the flushed cheeks; while the veins of the forehead are distended, and the inner part of the eyebrows are drawn upward and inward by the combined action of the *corrugator supercilii* and the *occipito frontalis*. The muscles of the throat, chest and diaphragm are spasmodically affected, and the respiration is frequently interrupted by sobs.

Bodily *pain*, the manifestation of which, in the face of our patients, is to us frequently an important means of diagnosis, not only in children but those of a larger growth, is a condition that particularly claims our attention from a professional and humanitarian point of view. Here let me say, in passing, that pain is by no means what it is usually regarded, an unmixed evil. Paradoxical as the statement may appear, it is frequently a blessing rather than a curse, as it is the chief means by which we become aware that some important organ is diseased. Without such intimation, the part affected might have become disorganized to such an extent as not only to destroy the function of the organ, but also to place even life itself in jeopardy. This applies with peculiar force to those organs which it is our duty to save; for it is the unpleasant sensation of pain which generally drives our patients to us, and it is the various manifestations induced by the pain endured which enables the experienced practitioner to determine the nature and extent of the difficulty.

In extreme pain, (except in cases where the patient is suffering from periodontitis, when the occlusion of the jaws intensifies the suffering,) the teeth are brought together with great force and ground against each other by the temporal masseter, and pterygoid muscles; the saliva frequently flows in large quantities from the mouth, which is drawn open laterally; the face is flushed, the veins distended, the nostrils dilated, the eyebrows raised, the forehead thrown into horizontal wrinkles, the eyelids widely opened, and the tears coursing over the cheeks, betray, in the most unmistakable manner, the suffering endured.

In *fear*, the head sinks backward between the elevated shoulders; the eyes are fixed and staring; the eyebrows are raised to their utmost by the *occipito-frontalis*, which in addition to a contracted state of the scalp, causes the hair to stand on end; the face is ghastly pale, and the cheeks hollow, shrunken, and in convulsive motion, like lips which are wide open, owing to the dropping of the lower jaw; the breathing is short, labored, and spasmodic.

In *rage*, the inflamed and glaring eyeballs, owing to the contraction of the *oblique* muscles, seem ready to dart from their sockets; the brow is thrown into deep vertical wrinkles by the *corrugators*; the nostrils are dilated; while through the clinched teeth, but, open mouth, words of hate are delivered with emphatic force.

In *joy*, the face is lighted up with a smile by the gentle elevation of the eyebrows, the lively and sparkling appearance of the eye, and the pleasant expression of the mouth, which, without being separated, is drawn aside at the corners.

Conscious of the time already absorbed, and desiring to hear from

some of the gentlemen who are present from a distance, we will pass over the consideration of other facial expressions which might be referred to, trusting that those which have been so hurriedly described may awaken a desire on the part of all to acquire a thorough and accurate knowledge of the entire subject, and to make that practical application of the knowledge thus gained of which it is susceptible, but which it does not come within the province of this address to make.

THE SUSQUEHANNA DENTAL ASSOCIATION.

MESSRS. EDITORS :—I send you herewith a brief synopsis of the proceedings that were had at our convention to form a Dental Association, held at Danville, Pa., May 4th, 1864. I am glad to be able to report that the project was a complete success, and that the “SUSQUEHANNA DENTAL ASSOCIATION” is an established reality: and we trust our organization will have a high and noble destiny. A number of dentists who could not be with us at our first meeting, will be on hand at our next, in January. Perfect harmony and good feeling were manifested, and a season of social intercourse was enjoyed that will be long remembered.

Yours,

J. M. B.

In pursuance of a call made by a number of dentists in the region of the Susquehanna, a convention of the profession met at the Montour House in Danville, Pa., on Wednesday, May 4th, 1864, and after due deliberation, unanimously resolved to form themselves into an organization, to be called the “SUSQUEHANNA DENTAL ASSOCIATION.”

A constitution and by-laws were adopted for the government of the association, and the roll was signed by the following dentists, namely: G. B. Brown, Danville; W. A. Chittenden, Scranton; C. S. Beck, Wilkesbarre; C. W. Sanders, Selinsgrove; John Locke, Lewisburg; E. C. Horne, Berwick; George Rishel, Bloomsburg; H. H. Martin, Jerseyshore; R. E. Burlan, Lewisburg; I. L. Andrews, Milton; G. W. Renn, Sunbury; H. Gerhart, Lewisburg; W. M. Rishel, Bloomsburg; R. L. Rick, Millville; J. M. Barrett, Wilkesbarre; M. D. L. Dodson, Williamsport; John. D. Wingate, Bellefonte; E. C. Rester, Danville; C. M. Williams, Pittston; H. C. Hower, Bloomsburg; B. F. Kinney, Light Street; John Vallerchamp, Selinsgrove; W. F. Vallerchamp, New Berlin.

The following were chosen officers for the ensuing year, viz:—President, Dr. J. M. Barrett; Vice President, Dr. G. B. Brown; Secretary,

Dr. John D. Wingate; Corresponding Secretary, Dr. M. D. L. Dodson; Treasurer, Dr. H. H. Martin; Librarian, Dr. John Locke; Executive Committee, Dr. Gerhart, Dr. W. A. Chittenden and Dr. G. W. Renn.

Drs. H. Gerhart, C. S. Beek and M. D. L. Dodson were appointed essayists for the meeting in January 1865, and Drs. G. W. Renn, R. E. Burlan and John Locke for the meeting in July following.

Dr. Martin offered a resolution asking dentists to advance their price list, which, after much discussion, was unanimously adopted.

John Vallerchamp, I. L. Andrews, J. M. Barrett, R. E. Burlan and E. C. Rester were elected delegates to the American Dental Association, to be held at Niagara Falls, in July next.

Communications from Professor C. N. Pierce, D. D. S., Philadelphia, Dr. A. Jones, N. Y., and Professor J. H. McQuillen, D. D. S., Philadelphia, were read, and, on motion, were ordered to be filed.

After amicable discussions upon various topics connected with the profession, in which most of the members participated, the Association adjourned.

The next meeting will be held in Lewisburg, on Wednesday, January 11th, 1865.

CHEMICAL DEPARTMENT.

BY W. P. HAYWOOD.

A FEW HINTS ON VULCANITE OR HARD RUBBER.

To prevent black joints.—Make the joints V shaped, leaving, of course, the open part on the backs, or lingual surface; then plug the joints with tinfoil; do the work as firm as you would on a natural tooth, and the rubber will never force through. This is the best plan ever adopted, and when well done will never fail. It should be done the next thing to packing the rubber; if the case is heated up it will facilitate the operation.

To prevent spreading of joints.—Place the front teeth as near the flask as you dare, without striking against the rim when compressing, and the joints will not open unless over-packed.

Excess of Rubber in packing can be avoided by cutting a large continuous groove around the whole case, forming a knife shaped edge, as near the impression of the teeth of the last plaster mould in the flask as you dare venture.

POLISHING ROUGE, OR COLCOOTHAR OF VITRIOL.—Make a solution of protosulphate of iron, (green copperas,) and another one of sal soda; mix the two solutions together; a muddy flocculent precipitate will be the result: this is to be well washed on a filter until no taste is perceptible in the last water that comes off the precipitate. Dry this, and

place it in a hessian crucible, and heat gently until it assumes a deep brown red color. It must then be finely levigated in a mortar, when it will have a bright red color. This is the jeweller's rouge; the best polishing powder for a finishing polish on gold plate known.

NERVE PASTE.—R Arsenous acid, gr. iv.; Morphia Sulph — —; Belladonna extract, — —; Creasote oil, qs.; Misce.—Grind the arsenic very fine with the creasote, then add the morphia, grinding that pretty well, lastly, mix the belladonna. At least one hour of energetic grinding should be expended on the mass.

The above, if properly made, will not separate. The high price of the morphia makes it a very dear article. There is a simple mixture of arsenic and oil of creasote that can be made for about fifty cents a pound; very poor stuff, not fit for dental purposes.

VARIETIES.

WHAT language does an Arabian child speak before it cuts its teeth? Gum Arabic.

A woman with the tooth-ache is apt to moan and groan, though she holds her jaw.

THE best of friends fall out. Our teeth are no exception.

A good dentist should have an eagle's eye, a lion's heart and a lady's hand.

THE blood presents itself on the air cells of the lungs of a deep blue color, and is then known as venous blood. Through the thin wall of the cell it obtains oxygen from the air, and gives out carbonic acid. It is the coloring matter of the disks which discharge this function, and during the act of change its tint alters to a bright crimson. It is said now to be arterialized or to constitute arterial blood. The magnitude of the scale on which this operation is carried forward, may be appreciated from the circumstance that in a man of average size, in a single day, about seventons of blood have been exposed to 226 cubic feet of atmospheric air.

MUCUS exudes from the surface of mucous membranes. It is of a white or yellow color, of a viscid constitution, and insoluble in water. It dissolves in a solution of potash, and is precipitated by an alkali.

PUS is a secretion from injured surfaces, resembling mucus in many respects, but distinguished by not being soluble in potash solution, but converted by it into a gelatinous body, which can be pulled out in threads.

METALS are said to be *ductile* when they possess the property of being drawn out into wires. Gold, silver, platinum, iron and copper are remarkable in this respect. Gold wire has been obtained so fine that its diameter measured 1-500th of an inch; 550 feet of it being required to weigh one grain. Platinum wire has been obtained so small that its diameter did not exceed 1-30,000th of an inch.

AMALGAMS are either liquid or solid : liquid, when the mercury predominates, and generally solid when the quantity of mercury is less than that of the metal to which it is united. There is, however, considerable variation in this respect. Thus, the amalgam formed of 80 parts of mercury and one of sodium is solid, while that formed of 15 parts of mercury and one of tin is liquid.

AN *aphlogistic lamp* may be made by attaching a coil of platinum wire to the wick of a small alcohol lamp, and then setting fire to the wick so as to heat the platinum wire. If now the flame be blown out, the wire continues to glow until all the alcohol in the lamp is consumed.

A cupel is a small vessel made of calcined bones or bone ashes, upon which silver is purified with lead in the assaying furnace. It is prepared most easily by driving pounded bone ashes into a small brass or iron mould by means of a pestle forcibly struck by a wooden mallet. It must then be removed cautiously, placed on a piece of paper, and dried before using it. The mould is open above and below, the pestle being made to give the necessary depression.

THE socket in which the lower jaw moves is so shallow, that sometimes a person by opening the mouth wide while gaping or the like, throws the jaw from its place, and cannot have his "gape out" until something be done. To replace the jaw, let the thumbs of a person be placed against the lower back teeth, and the fingers under the chin ; press downward and backward with the thumbs, and try at the same time to raise the jaw with the fingers : the thumbs should be immediately removed, since the jaws will close with great force.

THE nerves of taste commence in the lining of the mouth, in the same manner as the nerves of touch. The papillæ in which they commence are much more numerous at the tip of the tongue than elsewhere, hence that is the part which produces the most lively sensations.

ABOUT fifteen years ago, when game was abundant in Delaware, large parties of sportsmen came down from the North and "waged war" with the unsuspecting "feathered tribe." Among the number of those who were induced to exchange their cheerful homes for the more delightful prospect of roaming over a rocky and uneven country, were three individuals named respectively, Doctor Pearce, Bill Fisher, and Sam Wilson.

After "coasting about" for some days, and not being sufficiently rewarded for their trouble, they were rather disheartened, and, which added more to their dejection, Fisher had a violent toothache. The doctor, out of consideration for Bill's suffering, suggested that they should go in quest of a tavern. Some two hours hard riding brought them in sight of a singular looking building, in front of which projected one of those old fashioned well-poles. As they neared the house, a confused hum of voices saluted their ears. "Thunder," said the doctor, "this place is not a tavern, it's a school-house." "Suppose we inquire,"

suggested Sam Wilson. On entering a room near the front door, Wilson's idea that the party had got into a country inn was confirmed. On a shelf, behind a small counter, stood six tumblers, upon the tops of which were the same number of lemons by way of decoration. Hardly had our thirsty friends got seated when a side door opened, and a tall, red faced, long nosed individual, with an immense quill stuck behind his ear, stepped into the room. The doctor remarked, "we are looking for a tavern, but from the noise I should think that we have got into a school-house." "Sir," replied he of the quill, with much gravity, "you are in a school-house, nevertheless I can accommodate the gentlemen with a 'snifter' all round." "You see, sir," added he, "I attend to my duties as a teacher, while I ladle out liquor at the same time." "Well, you are a trump," said the doctor, in great admiration. "No sir," answered the schoolmaster, "I am a member of the legislature!" "Good gracious! are you anything else?" timidly inquired Sam Wilson. "Yes," replied quill, "I can say it with pride, that I am the only dentist in the country!" "How fortunate," exclaimed the doctor, "here is a friend of mine who is suffering from a severe toothache—do you think you can relieve him?" "I should think so," replied the dentist, when there is any pulling of teeth, consider me *in*." So saying he left the room, but returned in a few minutes, bringing with him a pair of large unwieldy pincers, such as are used by fishermen to skin eels. "Thunder," almost yelled the excited Fisher, "you don't intend to force those infernal catfish nippers down my throat?" The dentist was struck dumb by this question. Not so the waggish doctor, who immediately explained that the instrument in question was the regular forceps. The member of the legislature now, for the first time began to feel that his skill as a dentist was at stake. "Perhaps," said he, "you doubt my ability to pull teeth; but I will show you that the thing can be done." Entering the school room he cast his eyes over the group of children there assembled. Suddenly he seized a stout country lad, and after a short struggle succeeded in dragging him to the bar room, and dumping him down into a chair, "Now, gentlemen," said quill, with a flourish of his arms, "you will see a great thing done here!" So saying, he grasped the boy by the neck, and despite his frantic struggles to get free, drew a sound tooth from his mouth. Holding the tooth in the nippers, the operator exclaimed in a tone of triumph, "What do you think of that, gentlemen?" Mr. Fisher, whose toothache quite left him on seeing this, made no reply, but suggested an immediate departure. As our party of sportsmen were getting into their wagon, the schoolmaster, tavernkeeper, member of the legislature and dentist, bawled out, "I forgot to mention that the people of the county have *nominated me for Sheriff!*"

NOTICES OF BOOKS.

We have received a pamphlet from Dr. B. WOOD, inventor of "*Wood's Metal*," in which he sets forth his claims to the metal as a substitute for other material in filling teeth, and gives a description of its qualities and advantages. Being desirous that all "thinkers and workers" in the profession should have that just hearing, which the extended circulation of the "*QUARTERLY*" will give them, it is with pleasure that we reprint in our columns a few pages of that description—hoping that Dr. Wood will find out before it is too late, that however just and proper patents may be, (which we have defended in a former number of the "*QUARTERLY*") they will not *take* with dentists, simply for the reason, that we are all "A loving band of brothers," and "What's yours is mine, and what's mine is my own!"

Many inquiries are addressed to me in reference to the nature and advantages of the Plastic Metallic Filling, its origin, the manner of using it, the opinion of dental practitioners in regard to it, &c., &c. To economize time I have thought best to issue this Circular, in which I have endeavored to cover, as concisely as possible, the essential points, proposing hereafter to treat the subject in its various connections and bearings more at full. The general qualities and advantages of the material may be briefly cited.

ITS QUALITIES AND ADVANTAGES.

The Plastic Metallic Filling is designed for making perfect and durable plugs, as a substitute for gold where economy is an object, and for inferior material where the teeth can be saved, and not for temporarily stopping up those which are diseased and worthless. It is, therefore, assumed that the dental cavity be previously well prepared, and the entire operation be, skillfully executed with a view to saving the tooth permanently. There is no preservative quality in any material employed, considered in itself, whatever may have been imagined or claimed to the contrary, its value depending upon its successful manipulation, and its susceptibility of forming a secure, impermeable and durable filling. It is *good work* that saves the teeth, and, other things being equal, that with which the best work can be done is the best material for the purpose.

Assuming, then, that it be skillfully used, the Plastic Metallic Filling possesses advantages above every other material but gold for filling teeth, while it can be successfully employed in many cases where gold cannot. It can be introduced with facility and accurately secured. It moulds closely to the walls of the cavity without recession or shrinkage, forming a perfect

plug, solid throughout, that effectually excludes air and moisture. The proportions are adjusted so that it shall expand very slightly rather than contract, upon solidification, sufficient to make a close fit, but not enough to injure the frailest shell of a tooth. It can be built out from broken and defective teeth, so as to restore their original form and usefulness. In this way entire crowns have been restored for the support of clasps, as well as for use in mastication. In such cases, should the cusps or points become abraded by continued wear, as any material may, they can be readily built out, again whereas when gold foil or sponge gold chips out or wears off, under like circumstances, it is difficult of renewal, if not impracticable.

The metal is of close, compact texture, like solid tin or gold, and cannot absorb the buccal secretions, as do the earthy and metallic pastes, and also gold and tin foils when not well condensed; it therefore does not, like these, become tainted and offensive, but remains absolutely free from any interstitial impurity.

At a temperature but little higher than that of ordinary hot drinks, and yet not low enough to be affected by them, it is rendered soft and plastic, suitable for application, while at a heat liable to do harm, it becomes too fluid to work; by this it is self-gauged and within control,—being its own thermoscope. Operations with it are generally more expeditiously performed, and attended with less discomfort than with gold; in cases of highly sensitive dentine, the pain is far less than that produced by removing the decay, and but momentary; but in ordinary cases, there is no pain at all experienced in introducing it. As it solidifies upon introduction, it is of immediate service for mastication, and not liable like amalgams and other cements, to wear off or to crumble out.

It contains no mercury, nor is it allied in composition or qualities to amalgams, and it is free from their objections. Neither can it blacken the tooth bone, as these preparations are necessarily liable to do. The amalgam employed for stopping teeth, (commonly called “cement,” or “silver cement,”) is composed of an alloy of silver with one or two parts tin, or one-tenth part copper, (coin,) generally both—for pure silver does not harden well, and therefore is not used—which alloy is reduced to fillings, and mixed up with mercury (quicksilver,) into a paste for introduction into the tooth cavities, where it hardens after a while. But mercury is a fluid capable of permeating any tissue; it is also volatile and slowly vaporizes at any temperature; and as it has but a feeble affinity for the other metals in the compound, the particles of which it serves to agglutinate, it gradually eliminates itself in part, permeating the tubular structure of the tooth, which it blackens; for its particles finely comminuted are dark, and this is intensified if oxidated or combined with sulphur. This also leaves the plug porous to imbibe impurities.

The constituents of the Plastic Metallic Filling are, on the contrary, all permanently solid. The metal can undergo no change or loss of substance, except what might occur from the surface. It therefore does not, nor indeed can it, affect the tooth structure; nor discolor the contiguous portions of the dentine, when the plug is perfect so as to preclude impurities working underneath. If, however, the work be defective and decay go on, it may induce oxidation. The decayed matter of a tooth is the most corrosive of agents upon metals. It will oxidate any of the base metals. Even gold

itself in some instances eroded by it, as evinced by the purple stain communicated to the dentine where decay goes on in contiguity with gold plugs; and it is not to be presumed that a composition of the baser metals, as tin, cadmium and bismuth, would remain unaffected when any one of them separately would not; for there is no process of *compounding* by which metals can be transmuted into gold, as the alchemists of old, idly imagined. When oxidation thus takes place, the decay, of course, will be stained according to the color of the oxide or salt, which acts as the pigment—from gold, purple, “silver cement,” inky black, the Plastic Metallic Filling, light orange, etc.

But assuming the work to be thorough, as it should be whatever material be employed, and without which nothing will be effective for the permanent preservation of teeth, the Filling retains its color, and since this is silver-white, it does not darken the tooth, even when so thin as to show through; hence it is suitable for front teeth as well as back; whereas tin in such cases reveals a darker shade, amalgam shows through black, and gold itself is less objectionable only so far as its yellow hue corresponds more nearly to the color of the tooth.

As it requires no force for its introduction it can be safely used in frail teeth, and the teeth of children, &c., where pressure would do injury.

It is the best non-conductor of any metallic substance employed, the advantage of which is obvious, especially in teeth sensitive to transitions of heat and cold.

In hardness it is nearly equal to pure gold cast solid, and will outwear gold plugs imperfectly consolidated, as well as tin plugs however perfect.

It is inferior to gold in being more liable to tarnish, in certain conditions of the mouth, but is found superior in this respect to other metals used for the purpose. It is readily acted upon by nitro-muriatic acid, which dissolves gold and platinum; and also by nitric acid, which dissolves silver and the inferior metals, but resists other acids and agencies to which it subjected in the mouth, as well as silver or better. This appears due to the large preponderance of bismuth in the compound, a metal which deserves a place among the “precious metals” equal with silver, and but for its brittleness and softness when uncompounded, would rank above it, and which, (freed, of course, from the contaminations incident to it in the crude state, as obtained in commerce,) could it be worked in the form of foil like gold, would in the main essentials doubtless prove more suitable for the purpose than even the latter metal.

The Plastic Metallic Filling withstands any acid the tooth structure can, and will outlast the teeth under any agency by which they are both liable to be affected. Placing a tooth, plugged with it, in diluted hydrochloric acid, (the most destructive acid to which the natural teeth are liable to be subjected, and which, under certain conditions, is present in the mouth in a very diluted form,) upon examination after three weeks, the tooth bone was softened like cartilage, and the enamel reduced to an incoherent, pulpy powder, while the filling was not eroded away in the least, and although it was darkened on the surface by incipient oxidation, this was a mere pellicle, a light scratch revealing the metal perfectly intact and bright underneath. Sulphuric acid exhibited a similar result.

Of the various substitutes for gold resorted to, tin has heretofore been


considered the best, because generally found to resist the morbid secretions eliminated in the mouth better than the others; and it would have been more generally used instead of amalgam, oxichloride of zinc, or "bone filling, and other inferior stopping, but that its introduction involved more skill and trouble. But tested (by a disinterested observer) in comparison with the Plastic Metallic Filling, in mouths where the secretions were peculiar corrosive on oxidable metals, at the end of a year the tin was found black and soft, from oxidation, to some depth, while the Plastic Metallic Filling exhibited only a superficial tarnish. Even where the Filling is subjected to galvanic action in the mouth, in contact with gold, as in supporting a clasp, the oxidation is confined to the surface, forming a thin film, which appears to effectually prevent further action. Under ordinary conditions, however, it remains bright, or exhibits only a dull white opacity, hardly amounting to change of color—in striking contrast to the dark, dingy hue of poorly condensed gold plugs that have become soiled by the imbibition of impurities, and which had far better be replaced with this Filling, for appearance sake as well as utility.

In short, dentists, once skilled in the use of this material, find it better for the effectual preservation of teeth than any other yet employed, except gold thoroughly impacted at every point, and far superior to indifferent gold fillings.

The metal is also useful for engrafting artificial crowns and partial crowns, securing ordinary pivot teeth, and for repairing plate teeth, particularly on rubber base, and it may be used itself as a base for artificial sets; as well as for various purposes in the arts—silvering glass, making medallions, taking impressions of delicate forms and objects; for thermoscopic and safety gauges, hermetical sealing, affixing points, and ferrules, etc., etc. For purposes of the arts, however, where economy is the great desideratum, a different and much cheaper formula is prepared, and as therapeutical considerations do not here interpose, the ingredients are used as obtained in commerce, without being subjected to preliminary processes of refining and edulcoration, thereby obviating the most important item in the expense. But in this case, to prevent imposition upon the profession by unprincipled dealers, and upon the community by dishonestly penurious dentists, the metal which is employed for the arts is stamped and sold in thicker bars, which cannot be reduced without obliterating the impress, to counterfeit which is a criminal offence, with a penalty which few will hazard. Although the best security against imposition is for the community to avoid all professing to use the Plastic Metallic Filling, or "something as good," but who cannot show themselves entitled to use it, and then no imposition will be attempted. With this view the license system was adopted, and all licencees were duly accredited.

The qualities above mentioned render this material an object of no slight interest to the dental profession, and to these of the community who have teeth which they wish preserved in the most effectual as well as economical manner. And since some have attempted to detract from it, by representing it as the old fusible metal of the books, or some mercurial compound long since discarded by the profession, and as few take the trouble of referring to the sources of information, it may not be out of place to quote from some of the first announcements in regard to the original discovery—

which was the result of a systematic investigation during my residence in Nashville, Tenn. ; although the improvement which gives it value for dental purposes was not produced until two years after the original patent, nor brought to its present state of perfection until since my return to my native city.

 The *continuous circulation* of the "QUARTERLY" is now over FOUR THOUSAND COPIES !!! which is, we believe, considerably greater than that of any other periodical devoted to our speciality; thus offering to those who have valuable "ideas," or improvements, the very best medium for communication with the dental public, and others.

INVENTORS and ADVERTISERS are reminded that our "Subscription List" is carefully and thoroughly revised every few months, which enables those who make the pages of the "QUARTERLY" their media for advertising to place their discoveries and commodities *directly* in the hands of the reader and purchaser.

J. & L., Publishers.

TESTIMONIALS.

ARTIFICIAL TEETH.

TESTIMONIALS.

Having used Johnson & Lund's Teeth for nearly three years, I prefer them to any other manufacturer's—having used nearly all others.

JOHN L. CLARK, Waterloo, N. Y.

MESSRS. JOHNSON & LUND: Gentlemen—Having used your Teeth in my practice for the past year, and finding them SUPERIOR to all others in BEAUTY, NATURAL APPEARANCE and DURABILITY, I hereby add my humble testimony in their favor.

Yours respectfully, B. F. CLARK, Flint, Michigan.

I have used Teeth from the different manufacturers for ten years and have discovered in none those qualities which so nearly approach a desideratum as the productions of Johnson & Lund. Their re-semblance to nature in shape, shade and transparency is unsurpassed; and their freedom from brittleness under the hammer, and unequalled endurance under the blowpipe, show that the proportion of their ingredients effect such a happy combination as to leave little room for improvement in respect to general strength.

S. H. COSTEN, Philadelphia.

This is to certify, that we have used the teeth of Johnson & Lund, of Philadelphia, and think them superior to all others in use.

CONKEY & FRENCH, Elmira, New York.

The Teeth of Messrs. Johnson & Lund's manufacture, I am using in my practice, and can find no fault with them.

G. B. BROWN, Danville, Pa.

MESSRS. JOHNSON & LUND: Dear Sirs—I have used your Teeth for years with entire satisfaction to myself and customers; they are very much admired, particularly by the ladies, for their beauty and natural appearance in the mouth.

Yours respectfully, E. C. KESTER, Danville, Pa.

Having within the last thirteen years used teeth from nearly every establishment in the Union, I have no hesitation in saying that Johnson & Lund's teeth, as lately improved, present a greater combination of desirable qualities than do those of any other one establishment; and I cheerfully recommend them to the profession as a decidedly superior article.

F. O. HYATT, Cortlandville, New York.

MESSRS. JOHNSON & LUND: Gentlemen—You ask me how I like your teeth. I must say that I prefer them to those of any other manufacturer. The beautiful shape—the life-like and natural shades, and their strength under the blow pipe and hammer, render them all that the dentist could desire. The perfection you have attained in the manufacture of artificial teeth, deserves the thanks and substantial support of the dental profession. Wishing you success, I remain,

Yours truly, M. LUKENS LONG, Philadelphia.

MESSRS. JOHNSON & LUND: Dear Sirs—I take pleasure in adding my certificate in favor of your teeth. *They are without a fault.*

A. H. FOWLER, Ithaca, New York.

We have used in our practice for sometime past, teeth manufactured by Messrs. Johnson & Lund, and can speak highly of them in every respect.

BARTLETT & HOYSTRADT, Ithaca, New York.

I have used teeth manufactured by Johnson & Lund, of Philadelphia, and like them much. Their color and shapes are admirable.


W. BRISTOL, Lockport, New York.

MESSRS. JOHNSON & LUND: Permit us to say that your Artificial Teeth are excellent; they must eventually find their way into every dentist's laboratory throughout the country.

C. BENESOLE & SON, Philadelphia.

Having used Artificial Teeth of the various manufactures, and having had occasion to use those manufactured by Johnson & Lund, we can speak of them in the highest terms as to strength, beauty and adaptability to the various styles required in artificial dentures. Their appearance in the mouth is natural and life-like.

A. V. BELDING & SON, Medina, New York.



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VULCANIZED RUBBER.

How many thousands, should we not rather say millions, of human beings have, sparkling in their mouths, artificial teeth mounted upon Vulcanized India Rubber plate.

For about eight years it has been worn, its praises sounded by dentist and patient, and yet at every public meeting or convention of dentists, speakers have been heard denouncing the use of, and abusing in violent terms, this great improvement. The reasons assigned for this denunciation have been various. Some assert that Rubber is injurious to the health; some that the dentist loses by its use in a monied sense; others that the work has of necessity to be clumsy, in order to be strong;—in short the excuses and pretexts for not using it have been many. We rejoice in saying that many of the cavillers, being tempted *to try one case*, have tried many more, and now would rather pay any number of license fees, than to be compelled to stop the work.

In regard to its injuring the health of the patient, but few cases of disease have been made public, where it has been ascribed as the certain cause. Some physicians give the opinion that it is the cause of disease, and wish to verify that opinion by exhibiting the patient, his mouth and his Rubber teeth. While they condemn in glowing and indignant terms the Red Oxide of Mercury, there is no doubt that the poor victim is dosed with that favorite medicine of theirs, Calomel.

It is the practice of many dentists, in order to beautify their work, to stand it in the sun immersed in alcohol. The effect of this is to bring the coloring matter to the surface, and if there be any injurious quality, the patient is more likely to be affected by it. If any injurious consequences have resulted from wearing Vulcanized Rubber plates, the plates have been, without a doubt, treated in this manner. Dentists

have not lost in a pecuniary point of view by the introduction of this base. We have no hesitation in saying that if the amount of plate-work done by dentists since its introduction was definitely known, it would be more than four times what it was before *Goodyear's Patent* became popular with them. The price of permanent artificial teeth having been reduced, the demand, accordingly, has been increased,—the poorer class of people, mechanics, and even laboring men, being enabled to secure the services of dentists. If a practitioner, by adopting this style of work, can have his practice increased two, three, or even four-fold, it behooves the timid or prejudiced to be astir, and we assure them they will not be disappointed if they will but try it. We stood at one time upon the same ground with our frivolous objections, many obtained from hearsay, and clung for a long time to metal work, continuous gums being our favorite style; we still think very highly of the latter work, and still insert it; but at the same time, after having tried the Rubber, we find that we think very highly of that too.

So well can this substance be adapted to every part of the mouth, thereby securing a perfect suction in the upper, and a satisfactory and comfortable fit in the lower set, and so easily and with such dispatch can it be manufactured by the skillful workman, that dentists have not been slow to make use of it. So comfortable, so smooth to the tongue when properly finished, and so much better fitting than the majority of metal plates, it is not surprising that the demand is so great, and that mechanical dentists are "busy as bees." Although Rubber can be used in the great majority of cases, yet there are many instances, especially in partial sets, where it is not advisable to mount in that way. The dentist should by all means use his deliberate judgment, and not insert teeth in this way merely because the patient wishes it. He should not allow himself to become the football of his patients. Continuous gums on platina or gold should have the preference when suiting the case the best.

Nearly the whole attention of Artificial Teeth Manufacturers is turned towards making teeth suitable for this base. There is much emulation between the rival firms in producing the strongest and most beautiful teeth of this kind. So great is the emulation, that we think their nightly dreams must of necessity be of spar, enamel, and gum—how to improve, and how to beautify,—and when they awake in the morning, each one has a new idea or a new plan by which the Dental Profession will be benefited. Thus, those who use the useful vulcanizer can give to their patients the result of these dreams, labors, and ideas,—strong and life-like artificial teeth.

A. T.

PATHOLOGY IN ITS RELATION TO DENTAL IRRITATION.

BY DR. WM. A. NEWLAND.

PATHOLOGICAL Anatomy is a field of vast importance to the dental practitioner. In the extensive lessons of the mouth and jaws, we are enabled by its aid to point with the finger of Science to the very spot where disease is developing itself, and with the knowledge it imparts, to cure that disease with certainty.

To relieve patients of pain is the object generally of dental operations. The extraction of a tooth will not meet this indication in every case. The operator, therefore, should know with certainty to what extent he can use the forceps with perfect satisfaction to himself and to his patients. Nothing can be more mortifying to the conscientious dentist, than to extract a tooth and not relieve the patient of pain.

The pain caused by the protracted cutting of the *dens sapientiæ* is often mistaken for neuralgia, because a careful investigation is not made of all the points bearing upon the disease, and because those with a large practice do not take time to examine every case in detail. I will give a case with the principal points of interest connected with it, which, I trust, will better illustrate the subject.

Miss H., 25 years of age, called to have a right superior first bicuspid extracted, it being very painful. As it was desirable to save the tooth, if possible, on account of the deformity its loss would occasion, I placed in the arsenical paste, which gave great pain. After waiting some time, the pain increased. I then removed the application, and placed in the cavity creosote, together with the chloride of zinc (the dry salt), and instructed the patient to return in three hours. When she returned, she informed me that the pain had left the tooth and located itself at irregular intervals from the base of the Coronoid process to the Symphysis. I removed the cotton, and syringed the tooth with tepid water. I then opened the fang and found the nerve dead; I removed the dead portions as far as I could, and syringed it with cold water, then reapplied the creosote and chloride of zinc, and told her to call in three days. At that sitting I forced cotton tightly into the canal of the fang, and a pledget of the same material also between the approximal surfaces of this and the adjoining tooth. In one week from the day the case came under treatment, the tooth was plugged with gold.

I afterwards examined the mouth thoroughly, and found the right superior wisdom tooth with the crown decayed and nearly all broken

away. This I immediately extracted. In the lower jaw the teeth were crowded in a very narrow arch, each lateral incisor being pushed forward out of line. The lower wisdom teeth were but partially erupted. I used the gum lancet freely, which gave relief immediately.

The patient informed me that as soon as I cleansed out the fang of the bicuspid, a very troublesome flow of tears from the eye ceased, which had annoyed her for nearly a year. She had consulted a physician in regard to it, but had obtained no relief. She also stated that the troublesome pain in the jaw and face, of two years' standing, did not return. This disease had been treated by a physician for neuralgia, without obtaining permanent relief. She had also consulted a dentist, but at that time her teeth were all supposed to be sound, and, therefore, he could assign no cause for the pain.

This case presents several interesting points. I would call attention to the obscure and difficult diagnosis of the pain, which, from first appearances, seemed to result from an exposed nerve. The increased pain which followed the application of the arsenical paste, I can account for only by supposing the existence of a small portion of the living nerve; and that the minute quantity of arsenic which reached it by imbibition, was sufficient to destroy it. The length of time the patient suffered without obtaining relief; the character of the pain; the unsuccessful treatment by a physician; and the examination of the case by a dentist, who did not succeed in discovering the cause—all tend to confirm my opinion that the disturbance was caused by the strong resistance to the developing of the wisdom teeth. The deposition of bone on the fangs does not stop on account of the resistance offered to the erupting tooth. The wisdom teeth are often the seat of pain when it is least suspected, and the liability is greater when the teeth are crowded. This shows the importance of making an examination of the mouth, and of paying especial attention to the pathological conditions of these teeth.

The next point I would call attention to is the weeping of tears from the eye. This was caused by the irritation being transmitted from the inferior maxillary nerve to the Casserian ganglion, from thence through the opthalmic nerves to the Lachrymal nerve, which caused an increased action in the Lachrymal gland,—more tears being secreted than could be carried off by the Nasal duct. This is another proof that diseases of the eye and surrounding organs are sometimes caused by the teeth.

MADRID CORRESPONDENCE.

YES, I am at last in Madrid, and to use a Spanish phraseology, "*A la disposicion de Val.*" But you must not expect me to say much of a place and a people I hardly know. My first impressions regarding the country and the climate are thus far favorable, though I confess the former bears no comparison with "*La belle France.*"

Generally the weather here is delightful, being balmy and fresh, like our beautiful May mornings in the States; but lately it has become quite warm; and as Madrid is built on sandy hills, in an uninviting locality, on the banks of a river (the Manzanares), with bridges, but *no water*, the heat of the sun, radiating upon the white sand, renders the heat quite intolérable. Hence it is that almost all the people of means leave the city in July for other more congenial places on the continent, and do not return until September.

Of the people, though I might say somewhat more than about the country and climate, I forbear, lest my first impressions do them injustice. So accustomed are we in the States to regard the Spaniards of Old Spain as the embodiments of the virtues of the hidalgos of days of yore, that perhaps I may have expected rather too much, or made too few allowances for the changes created by the several revolutions which have agitated this country during the past century. Certain it is, that my high expectations are so far from being realized that, with a few honorable exceptions, I regard the present race quite degenerated from their illustrious ancestors. Future experience may, however, obliterate my first impressions, and I would defer to a later day, when I am better acquainted with the people, the expression of my opinion.

Madrid is quite a pleasant place. The city is about eight miles in circuit, and contains upwards of 8000 houses, with 146 churches, 18 hospitals, 13 colleges, 15 academies, 15 public libraries, 6 prisons, 15 granite gates, 85 squares and plazas, 33 fountains, and 50 public wells which supply the city with excellent water, brought from the mountains, thirty miles distant. The modern part of the city is fine, having good houses, straight streets, paved with flint and lined with foot pavements. The *Calle de Alcalá* is one of the finest streets in Europe, and is probably the only very fine street in Madrid. The *Puerta del Sol* is a large open area, where eight of the principal streets meet, and in which there is a great thoroughfare. The Royal Palace is a most magnificent place. It is a large square edifice, each front four hundred and seventy feet long and one hundred feet high, all built of white stone, and enclos-

ing a court one hundred and forty feet square. On the south side of the Palace is the Royal Armory, which contains the greatest treasure of historical weapons in the world. The royal stables contain three hundred and sixty horses, two hundred and fifty mules, and one hundred and twenty-four carriages, with endless apartments for livery dresses and harness rooms.

There are three public walks. The *Prado*, two miles long, from north to south, on the east side of the city, with rows of trees and several fountains; the *Paseo de los Delicias*, along the Manzanares, on the west side of the city; and the *Buen Retiro* gardens, to the east, beyond the *Prado*. The latter is my favorite walk, where I go every evening at seven o'clock, with my little family, meeting Her Majesty very frequently, and receiving from her a gracious bow in return to our salutations. She is by no means a pretty woman, but has a very pleasant face, which wins on you the more you see it. There are three theatres and several scientific and literary institutions, among which are the Royal Spanish Academy, containing a museum of natural history, and a few very fine pictures; the Royal Academy of History, and the "*Estudios Reales de San Isidro*," a kind of university, which has ten professors. The two largest libraries are the Royal Library, containing two hundred thousand volumes, some manuscripts, and a rare collection of coins illustrative of Spanish history; and the Library of San Isidro, containing sixty thousand volumes. The *Museo* is a magnificent gallery of two thousand pictures, of which forty-six are Murillos, ten Raphaels, sixty-two Rubens, sixty-four Velasquez, thirty-four Tintoretos, and forty-three Titians; it also contains some sculptures.

Of the great Spanish institution, the bull fights, I can say nothing, as they are held on Sundays, a day which I have been accustomed to respect at home, and which no change of country or circumstances will induce me to profane, even though I never see a bull fight in Spain. It is at best a barbarous and demoralizing *amusement*, which, I am quite sure, has unfavorable influences on Spanish society and Spanish morals. They are, however, frequented here by the young of most classes of the population, high and low, male and female.

Of my *confreres*, or professional brethren, like the bull fights, I can say but little, as I have had no opportunity of making their acquaintance or judging of their skill. There is an American gentleman, Mr. ———, who settled here some sixteen years ago, on whom I have called. He is said to be the best dentist here; but his eccentric habits are so uncongenial to my own, as to preclude, I fear, any further intimacy. From general observations, I think the profession is on a very

low standard, as you may judge from the fact that one of the first dentists here, until lately, used to sally out on horseback, and extract teeth on the public squares *from his saddle*, using a turnkey. At other times, he would drive out in a chariot, on which he had a platform with two chairs, occupied by two persons, a man and a woman, dressed in fancy costume, whose duty it was to grin at people, as he drove slowly on, take from their mouths a full set of teeth, grin again without them, and then replacing them, grin again and show them. Yesterday I noticed some of his placards on the streets, styling himself the first dentist of Madrid. Gold is seldom, if ever, used here, either for artificial dentures or fillings, the former being mostly constructed on vulcanite base, and the latter of amalgam, cobalt, and other inferior materials.

A lady came to me the other day, complaining very much of pain in her mouth, along the border of the superior maxillary; her gums were very sore, and at times she felt a shooting pain on the right cheek. I examined her mouth, and found it in a very *filthy* condition. Tartar had accumulated around the necks of the teeth, giving to the mouth a most repulsive and disagreeable aspect, and imparting to the breath an insufferably offensive odor. The work of destruction had already commenced on the alveolar processes, and some of her teeth were loose. But besides this, the second superior molar on the right side was very badly decayed, and had been filled with amalgam by a female dentist here (Dentist to the Queen); but so very awkwardly was the operation performed, that though the cavity was on the grinding surface, extending half way to the margin of the gum on the palatal surface, the plug *was embedded underneath the gum* on the cervical sides, and was, very naturally, irritating the parts and producing pain. I advised her to have the plug removed, and also the tartar, and to use an astringent lotion for the mouth; but she would not consent to this treatment, and her husband asked me if I could not give her a wash, such as the dentists here have for sale, to remove the pain and *make the gum grow*. I assured him that until the source of irritation was removed, any and all washes would do her mouth no good; but he seemed to doubt me, and concluded he would call again, which I never expect him or her to do.

I have stated this case and will state another, simply to demonstrate the standard of our profession in Spain, which I can alone attribute to the empiricism of those who represent it. A gentleman called to consult me about his mouth, which I found, on examination, to be nearly in the same condition as that of the woman above mentioned, only that

he had no tooth filled with amalgam, but a facial fistula on his cheek, which annoyed him very much, and which proceeded from a molar very badly decayed. I extracted the offending tooth, and proceeded to remove the tartar from others. Whilst about to proceed with the lower incisors, he suddenly stopped me and requested very seriously that I should not touch those teeth, "because," said he, "if you remove the tartar which has accumulated around the necks of those teeth, they will fall out for want of support." It was with the greatest difficulty that I persuaded him of his error, and only after I had promised to insert *gratis* the teeth in question, should they fall out from the want of such a support, would he submit to the operation.

Another case, to give you an idea of these people, and I am done. A highly respectable gentleman desired me to insert some artificial teeth for him *without taking an impression of the mouth*; and when I stated the impossibility of doing so, and explained to him the *modus operandi*, he looked quite astonished, and said, "I thought you could fasten those teeth to the gum."

I do not know how I shall succeed here. I have been very kindly received, and have some good influential friends. An editor has offered me his paper to publish anything I may write, of which offer I think I shall avail myself, in order to place our noble profession in its proper position, however much I may displease the ignorant empirics who now disgrace it.

J. C. GARDINER, M. D., D. D. S.

PROCEEDINGS OF THE TENTH ANNUAL SESSION OF THE AMERICAN DENTAL CONVENTION.

THE tenth annual session of this association commenced on Tuesday, August 2d, in the Supreme Court Room, Detroit, Michigan; the president, Dr. Taft, in the chair. The constitution was signed by the members, each one paying the annual fee of one dollar. The minutes of the last meeting were then read and adopted. The report of the committee on admitting dentists into the army was read and accepted, and the committee continued.

It was resolved that the Convention hold two sessions, from eight A. M. to half-past twelve, P. M., and from half-past two P. M. to six P. M., and that the final adjournment take place at five P. M. on Thursday.

The following officers were elected for the ensuing year:

President, Dr. W. W. Allport, Chicago, Ill.

Vice-President, Dr. H. F. Bishop, Worcester, Mass.

Recording Secretary, Dr. G. W. Ellis, Philadelphia, Penn'a.
Corresponding Secretary, Dr. W. H. Allen, New York, N. Y.
Treasurer, Dr. H. Benedict, Detroit, Michigan.

The President elect was conducted to the chair. He returned thanks for the honor, and said that he did not intend to make a speech. He thought it the duty of the President rather to facilitate business. The Convention adjourned until half-past two.

Afternoon Session.

The Convention came to order at half-past two. Dr. Taft, the retiring President, addressed the Convention. He regarded Dentistry as a modern institution; spoke of the efforts of Allen, Kingsley, Austin, and other prominent men of the profession, and thought associated effort a powerful agent for advancement.

"The best means of improving the practice and elevating the profession of Dentistry" was then discussed by Drs. Taft, Atkinson, Spalding, Perkins, Magill, Peirce, Bishop, Robinson, and McCollum, from whose remarks the following is gleaned:

Practitioners should perform the best operations, use the best material and instruments, and charge enough to fully remunerate them.

Students should devote themselves to Anatomy, Chemistry, and Metallurgy, and serve three years in the office and laboratory.

Good work and fair prices. By giving good work there will be no trouble in regard to pay.

Popular dental education. Impart a knowledge of the importance of dentistry to the people.

The necessity of a good education to be impressed upon the mind of the student before commencing the study of dentistry.

Low prices for the poor by good practitioners is philanthropic and honorable.

"Anæsthetics, their proper use and relative value," was next acted upon. A paper from Dr. G. T. Barker, upon Anæsthesia, was read by the Secretary. Dr. Atkinson read a paper also. Drs. Buckingham, Gerry, Spalding, Magill, and Corbin, spoke upon the subject, all favoring Anæsthetics. Dr. Spalding preferred chloroform, being diluted in the administration with atmospheric air. Give a dose of some alcoholic beverage before administering it.

SECOND DAY'S PROCEEDINGS.

Morning Session.

WEDNESDAY, August 3d, 1864.

The Convention came to order at eight o'clock. Dr. Forbes and Dr. Ellis gave their experience with Anæsthetics. Dr. Forbes gave chloroform to any person; less to persons of full habit. He could not tolerate ether. Dr. Ellis had much experience with both ether and chloroform, using ether almost always. Believed anæsthetics dangerous in uneducated and incompetent hands.

"Extracting teeth,—when it should be done and when not; the best

instruments for the purpose, and the subsequent treatment, when any is required." Drs. Magill, Bishop, Perkins, Robinson, Taft, J. Ward Ellis, Peirce, Overhalser, Gerry, Whitney, Buckingham, Allport, Kulp, and Atkinson, gave their experience and practice in this branch. There was much said in regard to the six year old molar, so often lost to the child before the parents know that it exists. Dr. Buckingham spoke of a dentist of Philadelphia who extracted nine thousand teeth a year by means of the elevator. Dr. Allport extracted teeth by means of this instrument without using much force. He insinuated its point between the root and the socket, and the root yielded readily.

"Absorption of Alveolar Process—causes and treatment," was next taken up. Dr. Atkinson commenced by saying that we must understand general principles, if we wish to treat disease. Two forms of disease affecting alveolar tissue, mercurial and syphilitic; each expending its energy upon separate parts of the tissue. He gave the treatment, correcting first constitutional derangements. Dr. Buckingham thought that the treatment of Syphilis did not come within the province of the dentist. The subject in its selection had reference to the absorption of the alveolar border by natural process after extraction.

The choice of the next place of meeting being the next order of business, the convention pronounced in favor of White Sulphur Springs, Ohio.

Dr. Kulp offered the following resolution, which was carried:

Whereas, The President of the United States has appointed Thursday, August 4th, as a day of fasting and prayer, be it therefore

Resolved, That this Convention observe the day by suspending the regular order of business from ten to half-past eleven A. M., to-morrow, and that the chairman appoint a committee of three to arrange an appropriate programme.

The chair appointed Drs. Kulp, Taft, and S. S. White.

Afternoon Session.

The Convention was called to order at three o'clock.

Dr. Taft referred to alveolar absorption; believed it due to systemic influences, also to deposition of tartar and inflammatory action in the gum. Absorption was nothing more than a solution and washing away of the alveolar tissue.

"Filling teeth,—the relative value of different materials, and the mode of operating in difficult cases," came up next for discussion. Drs. Perkins, J. Ward Ellis, Whitney, Bishop, Allport, Forbes, W. H. Allen, Atkinson, Pierce, Parker, Taft, Robinson, Buckingham, Burgess, Gerry, gave their experience upon the subject during the afternoon. Interest was manifested in the different methods of keeping the mouth dry during the operation of filling lower teeth. Dr. Allport wipes the mouth dry, then places rolls of bibulous paper over the orifices of the ducts, covering these again with a napkin, which he retains in position by his fingers. Dr. Forbes said if he spent an hour in the preparation of a difficult lower cavity he would dismiss the patient and fill at another sitting, thus avoiding a profuse flow of saliva. Dr. Peirce used cotton and

gum sandarach for effecting separation of the teeth, allowing it to remain thirty-six hours. Dr. Buckingham thought tin foil a good substitute for gold.

The Executive Committee for the ensuing year consists of Drs. Taft, Peirce, Forbes, Robinson, and Atkinson.

THIRD DAY'S PROCEEDINGS.

Morning Session.

THURSDAY, August 4th, 1864.

Dr. Taft confined himself almost exclusively to adhesive foil, and employed the mallet in filling. Said, if compelled to abandon the use of it, it would almost necessitate his giving up the practice of dentistry. Dr. Perkins disliked to hear such sweeping assertions, either in favor of or against any method of practice, since they give false impressions, and are calculated to mislead. Dr. Atkinson always used the mallet.

A letter from Dr. A. Hill was read by Dr. Allport.

A communication was received from Dr. S. J. Cobb, advocating popular Dental Education, and suggesting the propriety of commencing with the young by introducing Dental school books in our schools, having part of the instruction in catechism form.

Dr. Robinson moved that a committee of three be appointed to prepare a dental catechism for introduction into the common school books.

The motion was then amended so that the committee should consist of five members, and then adopted.

The following gentlemen were appointed: Drs. Taft, Abell, Spalding, Buckingham, and Robinson.

Dr. Haskill said that by an increase of circulation, the *People's Dental Journal* could be sold at a lower price, and that the first number could be obtained at the rate of five dollars per hundred.

A paper was read by Dr. B. Wood on the "Advancement of the Dental Profession."

It being ten o'clock, prayer was offered by Dr. Atkinson. A hymn was then sung, and a portion of the Scriptures read by Dr. Taft. Addresses were delivered by Drs. Atkinson and Robinson. Prayer was then offered by Dr. Kulp, and addresses delivered by Drs. Taft, Perkins, and Abell. Dr. Taft then prayed, and the Doxology was sung.

Religious exercises ended, the next subject was discussed. "The best method of obtaining accurate impressions and models of the mouth." Dr. Spalding took an impression with wax, swaged up a plate and used this plate as an impression cup. Drs. Field and Whitney do the same. Dr. Haskill thought a simple plaster impression all that was requisite. Dr. Perkins liked the pure yellow wax.

"The relative value of the different material as a base for artificial teeth," was passed to. Dr. Kulp had used rubber in 2000 cases. Thought those who did not favor its use had no experience with it. Dr. Dunn used Porcelain. Dr. Perkins thought Continuous Gum the acme of mechanical dentistry. Drs. Hayes, Spalding, Field, Buckingham, Whitney, and Knowlton, also spoke upon the subject. Dr. Knowl-

ton said that the springing of Rubber plates was due to removing them before they were cool.

Afternoon Session.

Dr. Taft said that he inserts that which he thought best adapted to the case. Dr. Atkinson then made a clinical demonstration.

The following resolution was offered by Dr. Magill, and carried.

Whereas, In the opinion of this Convention business will be more promptly accomplished by the preparation of papers upon regular subjects of discussion, rather than by extemporaneous effort, therefore

Resolved, That we request of those who intend to meet with us in the next annual convention, to examine carefully the subject offered, and, to the best of their ability, prepare well digested articles, confining themselves carefully to the subject under discussion, and to forward such papers to be read in Convention, in case they cannot attend in person.

Dr. Allport offered the following resolutions, which were carried :

Whereas, In the opinion of the American Dental Convention no less than two years pupilage in the office of a competent dentist, and attending upon two full courses of lectures in a dental college, will qualify an individual to practice dentistry properly, therefore,

Resolved, That practicing dentists be requested not to receive students into their offices for a less time than two years ; and under no circumstances unless they will agree to attend lectures in, and to be graduated from a dental college before entering upon the practice of the profession.

Resolved, That the people should require of all those who hereafter enter upon the practice of the profession, that they shall have received a diploma from a dental college as the first requisite for public confidence and patronage.

Dr. Buckingham moved that the Convention extend a vote of thanks to those of the profession of Detroit who have taken an interest in our proceedings. Carried.

Dr. Spalding moved a vote of thanks to the Judges of the Supreme Court for the privilege of meeting in the room used by that honorable body. Carried.

Adjourned to meet at White Sulphur Springs, Ohio, on the first Tuesday of August, 1865, at ten A. M.

THE AMERICAN DENTAL ASSOCIATION.

THE American Dental Association held its fourth annual meeting at Grant's Hall, Niagara Falls, commencing Tuesday, July 26th, and continuing in session four days. There were two sessions each day—the morning session commencing at 9 A. M., and ending at 2 P. M., the evening session from 8 P. M., until adjournment.

The first day was occupied in electing officers for the ensuing year; in reading letters from absent members ; and a discussion on the possi-

bility of admitting dentists into the military hospitals and the army. The committee appointed last year, met with much opposition in the Medical Department, and some other means must be resorted to, to bring about the desired end. Dr. Shepard advocated independent action; those of the profession desiring to practice in the army should obtain a permit from the Governor of their State, which will admit them among the soldiers from the State. Other members spoke upon the subject, each one suggesting something to "hurry the matter along."

The election resulted as follows:

President—Dr. J. H. McQuillen, Philadelphia, Pa.

1st Vice-President—Dr. C. P. Fitch, New York.

2d Vice-President—Dr. H. Benedict, Detroit.

Corresponding Secretary—Dr. G. W. Ellis, Philadelphia.

Recording Secretary—Dr. J. Taft, Cincinnati, Ohio.

Treasurer—Dr. I. J. Wetherbee, Boston.

The following Societies with their delegates were represented:

Philadelphia Dental College, Dr. J. H. McQuillen, Philadelphia.

New York Society of Dental Surgeons, Dr. G. S. Allan, Newburgh, New York.

Odontographic Society of Pennsylvania, Dr. A. B. Robbins, Meadville, Pa.; Dr. G. W. Ellis, Philadelphia.

Iowa State Dental Society, Dr. W. O. Kulps of Muscatine; Dr. A. P. Sayles, Lyons.

Brooklyn Dental Association, Drs. Samuel Hassall, C. P. Fitch, W. H. Atkinson, John Allen, A. C. Hawes, W. H. Allen, of New York City; Dr. F. N. Seabury, of Providence, R. I.; Dr. J. H. Smith, New Haven, Conn.

Western Dental Society, Drs. W. W. Allport, S. P. Hall, I. P. Haskell, of Chicago, Ill.; Drs. H. C. Peebles, A. M. Leslie, Isaiah Forbes, C. W. Spalding, of St. Louis, Mo.

Massachusetts Association of Dental Surgeons, Dr. I. J. Wetherbee, Boston; Dr. Bishop, Worcester, Mass.

Ohio Dental College Association, Dr. Decamp, Mansfield, Ohio; Dr. Horton, Cleveland, Ohio; Dr. Dean, Chicago, Ill.; Drs. Peebles, Taylor, Barron, Leslie, St. Louis, Mo.

Chicago Dental Society, Drs. Bogue, G. W. Ellis, and Noble, Chicago, Ill.

Indiana State Dental Association, Dr. Johnson, Indianapolis.

Mississippi Valley Dental Association, Dr. Foote, Cincinnati; Dr. Chesebrough, Toledo; Dr. Driggs, Lexington, Ky.; Dr. McClellan, Augusta, Ky.

Central New York Dental Association, Dr. Rhodes, Norwich; Dr. Orcutt, Jordan; Drs. Campbell and Foreman, Syracuse; Dr. Watson, Auburn.

New Haven Dental Society, Drs. Smith, Strong, and Metcalf, New Haven, Conn.

Pittsburg Dental Association, Dr. Sill, Pittsburg, Pa.

St. Louis Dental Association, Drs. Jones, Morrison, and Eames, St. Louis, Mo.

Northern Ohio Dental Association, Drs. Huntington, Painsville, and Buffett, Cleaveland.

Western New York Dental Association, Dr. Barbour, Le Roy, N. Y.; Dr. Whitney, Buffalo; Dr. Coleman, Canandaigua; Dr. Naramore, Rochester; Dr. Walter, Lockport; Dr. E. L. Wood, Brockport.

Buffalo Dental Association, Drs. Lewis, Hayes, Snow, and Brown, Buffalo, N. Y.

Michigan Dental Association, Dr. Porter, Ann Harbor, Mich.; Dr. Benedict, Detroit; Dr. Stone, Albion; Dr. Whitney, East Saginaw.

Cincinnati Dental Association, Dr. Knowlton, Cincinnati.

Hudson Valley Dental Association, Drs. Wheeler and French, Troy, N. Y.

Pennsylvania Association of Dental Surgeons, Dr. T. L. Buckingham, Philadelphia.

Merrimack Valley Dental Association, Dr. Cummings, Concord, N. H.

Albany Dental Association, Drs. Wood and Perkins, Albany, N. Y.

The following permanent members were also present: Drs. Blake, Lyman, Martin, Whinnery, Taft, Francis, Harris, Palmer, Allen, and Pease.

Dr. McQuillen, the President elect, on taking the chair, made a few remarks. He referred to the opposition to, and misrepresentation of, the American Dental Association at its infancy; and believed in, and strongly advocated, a National Dental Association and representative basis.

Dr. Allen, the retiring President, on being called upon, gave a short account of the origin, &c., of the Association, and thought the prospect was encouraging.

Dr. Allen read a letter from Dr. Watt, a member of the Association, now a Surgeon in a sixty days' regiment, who expressed sympathy with the Association, and regretted that he could not attend.

Dr. Ellis read a letter from Dr. Flagg, who expressed a warm interest in the welfare of the Association, and wished a harmonious session.

The report of the Committee on Dental Pathology and Surgery, prepared by Dr. Flagg, was read by Dr. Ellis. In the consideration of pathological questions, he advocated simplicity of terms. Defined Physiology as the science of *normal* nutrition, *health* being the result of such nutrition. Pathology is the science of *perverted* nutrition, and disease the result of that perversion.

Dr. Atkinson also presented a report, giving a lengthy dissertation upon cellular pathology.

Dr. Chesebrough read a paper on "The liability of adult teeth to decay in the United States, with comparisons between English hospital and American office practice; also a tabular view of the relative ratio between the extreme west and middle of the United States, North." He remarked that the liability of teeth to decay was greater upon this side of the Atlantic. The liability to caries in the female over the male, existed only in the six front teeth, the others being about equal.

Dr. Pease read a paper on "Rosteogenesis." By this means, many

useless teeth were made valuable. New formed bone has very low vitality, and should be carefully protected. The treatment of abscess he considered of greater difficulty in the upper than in the inferior maxillary. A case of phosphor—necrosis of a portion of one side of the jaw—had proven quite tractable.

Dr. McQuillen performed before the members some venesections upon pigeons, demonstrating the functions of the cerebrum and cerebellum, and the insensibility of the cerebrum was shown, by cutting away several slices.

The subject of "Mechanical Dentistry" was taken up. Dr. Buckingham presented specimens of rubber which had been vulcanized without any coloring matter. He said that ivory or lamp black would give a black color, oxide of zinc a whitish hue, oxide of iron a dingy red, and the red sulphate of mercury, or vermilion, the most desirable shade of red.

A paper was read from Dr. Bonwill, upon "Articulation and Articulators," in which he advocated perfect occlusion, and deprecated the introduction of imperfectly articulated work.

Dr. John Allen read a paper, referring to the liability of animal structures to decay. He spoke of the advantages and disadvantages of rubber, and thought gold and platina the best metals to mount artificial teeth upon.

Dr. Haskill regarded continuous gum work on platina as superior to all other, and said in his hands it seldom required to be repaired.

The following resolution, which was carried, was offered by Dr. Wetherbee :

Whereas, Dr. Horace Wells, of Hartford, Connecticut, in the year 1844, did introduce to the public, in his practice of dental surgery, nitrous oxide gas as an anæsthetic for the painless extraction of teeth ; and,

Whereas, Nitrous oxide gas, as exhibited by Dr. Horace Wells, proved absolutely successful, as is affirmed by abundant documentary evidence at hand, clearly setting forth his claims as the first to bring to public notice any agent producing anæsthesia, therefore be it

Resolved, By the *American Dental Association*, that to Horace Wells, of Hartford Connecticut, (now deceased,) belongs the credit and honor of the introduction of anæsthesia in the United States of America; and we firmly protest against the injustice done to truth, and the memory of Dr. Horace Wells, in the effort made during a series of years, and especially at the last session of Congress, to award the credit to other person or persons.

The report of the Committee on Dental Education was offered by the chairman, Dr. McQuillen. He advocated Dental Colleges, favoring the support of those already established, and the incorporation of new ones.

The report of the Committee on Dental Literature was read by Dr. Fitch. He examined the dental journals, and criticised them freely; he did not think advertisements detracted from their importance and value.

The report of the Committee on Dental Chemistry was made by Dr. Buckingham. This science was important to us both as dentists and as intelligent men. Thought the sessions of the schools too short to enable

the students to gain a thorough knowledge of any of the branches taught.

Upon ballot, Chicago was chosen as the next place of meeting.

The Committee on Local Societies was reported by Dr. Taft. Named the officers, number of active, corresponding, and honorary members of the various societies.

The following was offered by Dr. Spalding, and carried :

Resolved, That the Publication Committee be authorized to illustrate the articulator exhibited by Dr. Bonwill, and also any other instruments or apparatus shown or described at this Association.

Dr. Allport offered the following, which was carried :

Whereas, In the opinion of the American Dental Association, no less than two years of pupilage in the office of a competent dentist, and attendance upon two full courses of lectures in a dental college, is necessary to qualify a student to practice dentistry properly ; therefore,

Resolved, That practitioners of dentistry be requested not to take students for a less term than two years, and under no consideration, unless they agree to attend lectures and graduate from a dental college before they enter upon the practice of their profession ; and that the people should demand of all those who hereafter enter upon the practice of dentistry that they should hold a diploma from a Dental College, as the first requisite to public confidence and patronage.

The following, by Dr. Fitch, was carried :

Resolved, That Dr. Allport's resolution, in reference to the education of Dentists, unaccompanied by any name, yet as emanating from this Association, be published in the newspapers throughout the land.

The following also by Dr. Fitch :

Resolved, That this Association appoint Dr. J. H. McQuillen a committee of one, to prepare, and present at its next session, a full history of the American Dental Society from its incipency.

The following by Dr. Kulp, which was carried :

Resolved, That the American Dental Association recommend that dentists everywhere give more attention to the education of the people on the subject of dentistry, by the circulation of essays in branches of the profession valuable to the people.

The following by Dr. Taft, which was carried :

Resolved, That this Association suggest to all local societies that they enter at once upon some systematic method of giving information to the people in regard to the care and preservation of their teeth.

Resolved, That all local societies represented, or to be represented, in this body, be requested to present, annually, to this Association, a report of their condition, standing, and operations during the last year ; that report to contain, among other things, the number of members, the number of admissions, the names of the officers, and delegates to this body ; also any resolutions or proceedings of general interest to the profession.

It was determined to devote a portion of the next session to clinical demonstrations.

Adjourned to meet again at Chicago, on the last Tuesday of July, 1865.

CHEMICAL DEPARTMENT.

BY W. P. HAYWOOD.

Alloys of Gold, Platinum, Silver, &c.—Care in Refining—Causes and Effects.

IN the dental laboratory, we find platina, gold, silver, copper, iron, zinc, lead, tin, and other metals thrown together with perfect looseness. The question arises with the prudent, how to separate them with economy.

Remove the iron filings with a magnet, as they are detrimental to the humid process of refining; in fact it is next to impossible to separate fine particles of iron and platina when treated with nitric acid of sp. gr. 1.35, to the passivity of the former metal when in contact with platina and immersed in hydrated nitric acid of the strength just noted. Other metals possess this peculiar property of becoming passive and unacted on by any one acid. The properties of iron rendered passive are curious. It appears to have lost all tendency to unite with oxygen; it does not dissolve in acids; it does not precipitate copper from its solutions; and when used as a positive electrode for a voltaic battery, oxygen is evolved from it precisely as if the electrode had been platina. The most available explanation of these effects is, that the iron, by an alteration of molecular structure, assumes a condition by which it becomes similar in its electrical relations to the noble metals. After removing all the iron you can with the magnet, treat the metals with com. hydrochloric (muriatic acid), for twelve hours; then wash with clean, hot water until this last comes off tasteless. By this process you get clear of any remaining particles of iron; also of tin, lead, zinc, copper, brass, &c.

To regain silver, dose the metals with com. nitric acid, free from muriatic acid; apply a gentle heat and let stand for a few hours; pour off the solution in a clean glass or porcelain vessel, of suitable size to hold about ten times as much water as there is of the solution. The remaining metals should be washed and the water poured into the solution of silver. Precipitate the silver with a strong solution of table salt or com. muriatic acid, or by placing a strip of clean copper in it. This last precipitates the silver in the metallic state, but leaves part behind. The balance can be thrown down by the process first mentioned. To reduce the chloride of silver to the metallic state: wash free from nitric acid, then add sulphuric acid and water, enough of the former to act energetically on a strip of zinc placed in the bottom of the solution; an evolution of hydrogen commences, and the silver separates as a fine metallic powder, as the zinc dissolves. The action is here, properly speaking, galvanic; an equivalent (32.3) of zinc combining with the chlorine in place of each equivalent (108) of silver which is set free. This fine silver powder must be washed free from acid and digested two or three hours with dilute muriatic acid to remove any particles of zinc remaining, after which wash free from acid, and melt.

To reduce chloride of silver by the fire, fuse with half its weight of

white flux (carbonate of potash); the chlorine combines with the potassium, and the silver, which, at a lower temperature, would have united with the oxygen and carbonic acid, is separated, those two bodies escaping in the gaseous form; the formula of the reaction being that $K. O. . C. O_2$ and $Cl. Ag.$ give $K. Cl.$ and free $Ag.$, while $O.$ and $C. O_2$ are driven off. There is in this last process always a loss of the silver which goes up the chimney in company with the gases. The most economical method of regaining it, is to throw it down with copper in the metallic state, and fuse with borax.

VARIETIES.

DRAWING PAPER—The dentist's bill.

No professional man lives so much from hand to mouth as the dentist.

THE charlatan dentists of Madrid, Spain, have been stopped performing operations in the streets, on the ground that it injured public morals, and filled the streets with blood.

RUBBER plates should be dipped in cold water before being removed from the flask. If taken out while warm, the plate is apt to spring.

A **GREAT** many rubber plates are spoiled by over-heating the rubber in packing. It renders the base spongy, and often displaces the teeth.

THE most sensible plan yet presented for popular dental education was advanced by Dr. S. J. Cobb of Nashville, Tennessee, in a letter to the American Dental Convention. Dr. Cobb should get up a spelling book for our public and private schools, with his catechism attached. The influence of dentists throughout the land would be sufficient to secure its introduction.

A **SMALL** napkin, folded or rolled up, and pressed with the finger of the operator or patient against the lingual surface of the tooth to be filled, will prevent the flow of the saliva to the part, and enable the dentist to perform the operation with despatch.

MARBLE sand, commonly used to clean door-steps, together with soap (a good quality of washing soap to be preferred), will remove effectually wax, grease from a lathe, and other sticky substances from the hands, and make them white and soft.

MELVILLE L. PRONSON, of Fall River, Massachusetts, recently died very suddenly, from applying some "Pain Killer" to a defective tooth. A few moments after applying it, he raised his hand to his head and exclaimed, "Oh, my head!" fell forward on the floor, and died almost instantly.

A **STUDENT** under examination, being asked the different effects of heat and cold, replied: "Heat expands and cold contracts." "Quite

right; can you give me an example?" "Yes, sir. In summer, which is hot, the days are long; but in winter, which is cool, the days are short."

A PHYSICIAN was lecturing lately on the ignorance of people about their own complaints, and said that a lady once asked him what his next lecture was to be upon; and being told "the circulation of the blood," replied that she should certainly attend, for she had been troubled with that complaint for a long time.

THE number of dentists in attendance at the last annual meeting of the American Dental Association was more than double that of last year. The number of societies sending delegates was nearly double—fourteen last year, and twenty-six this year. Dentists, it appears from this, are growing quite brotherly.

THE lungs, which constitute the organ by which air is introduced, are originally developed as diverticula from the œsophagus, and finally become an immense congeries of cells emptying into the trachea. In respiration they are perfectly passive, the air being introduced and expelled alternately by muscular contraction. It is commonly estimated that, on an average, about seventeen inspirations are made each minute, and at each inspiration about seventeen cubic inches of air are introduced.

THE process of digestion appears to be exclusively for the object of effecting the minute subdivision of the food. By the action of the teeth or other organs of mastication, it is first roughly divided and simultaneously mixed with the saliva. It is then passed into the stomach, and in that organ mixes with the gastric juice, a viscid and slightly acid body. This mixture is perfected by certain movements which the food now undergoes, and under the conjoint action of the saliva and gastric juice, is totally broken up into a gray, semi-fluid and homogeneous mass, sometimes acid and sometimes insipid, of the consistency of cream or gruel, called *chyme*. This gradually passes out through the pyloric orifice of the stomach, and enters the intestine.

THE quality of the blood is constantly varying. From the food, it receives ingredients to nourish and fuel to heat the system, and from what is eaten, many things pass into the blood vessels, and become a part of the blood, which are not for its own good. Its nourishment is continually taken from it by the demands of the parts through which it is passing, and its fuel must be constantly used to produce heat. The wear of the body or its decomposition is constantly adding to it, substance which it is the duty of the excreting organs to remove. This they sometimes do promptly, sometimes tardily, so that sometimes the blood never contains more waste substance than is for the health of the system, and sometimes it is diseased by the slackness of the excreting apparatus.

THE DENTAL QUARTERLY.

VOL. 3. PHILADELPHIA, DECEMBER, 1864. No. 4.

MEDALS vs. PATENTS.

We are pleased to see that the Mississippi Valley Dental Association, in a laudable and earnest effort to stimulate the inventive genius of their professional brethren, have offered a silver medal for the most valuable discovery, improvement or invention pertaining to dentistry, during the present year. The proposition is not confined to those engaged in the dental profession, but is extended to everybody, whether dentist, physician or mechanic. Information in regard to it may be obtained of Dr. A. S. Talbert, Lexington, Kentucky, or of Dr. Shadoan, box 2079, Cincinnati, Ohio.

This is not a new thing with our friends of the Far West, who are ever moving in the right direction, just at the right time. Dental patents are being frowned upon; societies are being formed for mutual protection against the claims of patentees; a rebellion is being commenced against a class in the profession whose services are almost indispensable. It is to be regretted that our inventors have sought remuneration for their trouble by means of letters patent, and more to be lamented that they continue to do so. It is not to be denied that they have the right, and that it is a just course, but it should be evident to them by this time, that it is not expedient. With the mass it seems to be the determination not to patronize or encourage any one or anything savoring of *patent*, except in a *quiet way*, and we regret to say that that quiet way adds nothing to the yearly income of patentees. Many of the latter have fled for protection and patronage to dental societies, hoping in that way to push their respective improvements through; but after fighting the battle long and ardently, have been compelled to fold their arms and patiently wait for something to "*turn up*" in their favor, or

else submit to the force of circumstances, compelled to see the wolves devour their substance.

Improvements and inventions are very often the work of years, with attendant anxiety expense and care. Idea upon idea, each in its turn, is taken hold of and experimented upon ; if answering the purpose, it is taken advantage of, and if not it is cast aside. Little by little, sometimes by accident, sometimes by design, the end is attained, and the toiler expects in some way to be remunerated by those who are benefitted by it. But, unfortunately for him, it is too often regarded as common property, and if he be unselfish and communicative, it is taken from him and others receive the reward. He may die unhonored and unrequited, and his widow and children suffer in poverty. Circumstances may occasionally occur which revive an interest in his memory and their welfare, and to a certain extent justice is done ; but this is generally through friends and influence.

It is meet and right that inventors should either be protected by government or receive honorable acknowledgement and reward in the way of a medal or an amount of money ; and ample inducements should be offered them to accept the latter. Accepting it, and placing the material for improvement or the improvement itself in the market, the amount realized, we have not the least doubt, would exceed anything that might be derived from a patent right. For a time the Rubber Company would not allow its rubber, manufactured especially for dentists' use, to be sold to any one but licensees ; other dentists received their supply from another source. The sale being large, and the company seeing its mistake, is now willing to have its rubber sold to any one and every one ; finding, no doubt, that its income from the sales is many times larger than that from licenses. This should be a useful hint to some who are at present endeavoring to sell their material under cover of a license ; and to others, who with unsustained patent rights, but unwilling to acknowledge it, are thus retarding the sale of their goods by the hundreds of dollars worth per year, without any corresponding benefit.

Since letters patent have proved to be not only unpopular with dentists, but in the majority of instances failures, the offer of the Mississippi Valley Dental Association is both sensible and opportune, and bids fair to generate a better feeling towards our inventors. Rewards should therefore be offered by every society for improvements of value ; and every dentist should consider it his duty to give his mite towards recompensing the originators of them. This is a just and practicable way of

discouraging any embarkation in the way of patent rights. A medal or an amount of money should be preferred to lawsuits and the ill will of professional brethren. It would be better to listen to little flattering speeches, though a great deal be "*soft soap*," than to be compelled to submit to the taunts and slurs of the unthinking and uncharitable.

A. T.

CASES OF ANOMALY.

BY DR. H. J. CRESSINGER, ASHLAND, O.

I have had recently to come under my observation, two very interesting cases of Anomaly. The first was presented in the mouth of a young lady about seventeen years of age. The left inferior cuspidati and the left inferior lateral incisor were wanting. They never had appeared, and the appearance of the gum indicated that they never would. The right inferior *deciduous* cuspidati, and the right inferior permanent cuspidati were both fully developed. The deciduous tooth was slightly loose. The left deciduous cuspidati had shed about one year ago. The right permanent cuspidati occupied the place of the right lateral incisor; the right lateral the place of the right central; the right central the place of the left central, and the left central in the place of the left lateral—leaving a vacancy of but one tooth.

The second case presented itself in the mouth of a lady about twenty-seven years of age—a patient for extracting, preparatory to inserting artificial substitutes. The *two* superior lateral incisors were standing on the left side, fully developed and regular in the arch. One lateral on the right side as usual. The left cuspidati occupied the place of the left first bicuspidati.

The first case I mention is certainly most unusual. There evidently could have been no follicular formation for either of the wanting teeth. Another singular feature of this case, but not so unusual, was that the right deciduous cuspidati remained in the mouth so long; it stood just back of the permanent cuspidati, both being within the arch.

ANNEALED GOLD FOIL.

BY DR. T. MARSHALL, WILMINGTON, DEL.

THE thorough treatment of the carious organs of mastication in such a manner as to preserve them from further decay, is certainly one

of the most important specialities of the dental art. Hence, anything that may be discovered or invented that will better enable us to save these organs, is not only a blessing to us, but it will be of inestimable value to future generations, and therefore should meet with all the encouragement which it merits after a fair trial.

About seven years ago I noticed that there was a difference between the gold foil then manufactured and that put into the market previously, which affected its working qualities. There was considerable said about that time in reference to working gold on the adhesive, or, as some term it, the cold welding plan, and my impression was, that some change had been made in the mode of preparing the gold. But on inquiring of the manufacturers, they declared that no such change had been made. One thing in connection seems worthy of note; that is, at the time the change was observed in the working properties of the gold, the manufacturers had placed a new label on the foil book, which read, "superior improved gold foil," but the foil was far inferior in my estimation to what it had been under the old inscription. Previous to this change I could drive an instrument against a pellet until it would be driven into every inequality of a cavity, working soft until consolidated, thus filling a cavity compactly. But what is the condition of the gold after this change? If you fold it up it rattles. If you strike a pellet two or three times with an instrument in order to press it into the inequalities of a cavity, it becomes as solid and unmanageable as a piece of gold wire, and unless you apply two or three thicknesses of foil at a time, which is almost an endless task, you might as well try to fill a tooth with wire made of block tin. My opinion, therefore, is, that the gold foil which will bear the most manipulation without becoming stiff and hard is the best, under all circumstances, for filling teeth, in whatever form or manner it may be used, as pellets, cylinders, ropes, or on the adhesive plan, for in working the hard foil, each piece becomes a compact bar or lump. I was exceedingly annoyed at this condition of the gold, and earnestly sought a remedy of the different makers of foil, but in vain. I also discovered that other practitioners had fallen into the same dilemma; so I was then satisfied that it was not all my fault, that the foil did not work well; hence I tried to discover some method to soften the gold. I tried various plans to accomplish my purpose by the use of dry heat, but could not work the gold in that condition with any satisfaction. One day while studying the matter over, the idea suggested itself of boiling the foil in clean water; I tried it, and found the experiment

successful beyond my expectations. My plan is as follows: I take each sheet and crush it gently and carelessly, until it is about the size of a hickory nut. I then place the sheets in a tin boiler, pour boiling water on it to facilitate the operation, then set it on the fire and boil it about three minutes, after which I take each sheet in my hands and blow upon it, and with a little careful manipulation it is readily spread out to its proper size. I then lay them on paper and place them in the oven to dry; when dry I place the foil again in the book and it is ready for use. Since discovering this method of annealing foil, I have repeatedly tried to work my foil whenever I received a new lot, without boiling it, but did not succeed. To any one who wishes to have perfectly soft, silky and pliable foil, I would recommend this plan. In heating foil over a spirit lamp in order to make it adhesive, if heated so as to give a glow, it will not adhere, but is more stubborn than when it comes from the hands of the manufacturer. Can our manufacturers give us foil that will not need softening before being used?

SENSITIVE DENTINE.

BY DR. WM. A. NEWLAND.

It is supposed by some writers to be an inflammatory action caused by the acidity of the secretions of the mouth. According to Donne, the saliva has an acid relation in all cases of irritation and inflammation of the stomach, in pleurty, encephalitis, intermittent fevers, acute rheumatism, uterine affections and amenorrhoea. Brugnatelli detected oxalic acid in the saliva of a phthisical patient.

The teeth of those persons who use tobacco are sometimes extremely sensitive, and although the saliva is alkaline the secretion from the mucous membrane is acid; and such being the case we can hardly expect that the secretions should be neutralized, as mucus does not readily mix unless agitated with another fluid; and such agitation would not take place in that lodged between the teeth, or in the fissures or cavities of the teeth.

If we examine the structure of dentine we find it to be composed of minute tubes, and intertubular tissue radiating from the periphery of the pulp cavity; as these tubes are evidently made for the purpose of aiding in the nourishment of this dentine, they must necessarily contain nerve fibres, although extremely small are large enough for ensuring the

vitality of the organ through which they radiate; when these become exposed to the influence of the acid secretions of the mouth over the influence of food—generally sweet, they take on an inflammatory action, generally called exalted sensibility, although it may give no inconvenience, except when cut by an instrument; or we may have continuous pain long before the pulp becomes exposed.

The vascularity of the Dentine has been well demonstrated, although the tubes are too small to allow the red corpuscles of the blood to pass through, unless broken up and disorganized, by drowning or hanging; yet they will readily admit the passage of the liquor sanguinis.

The treatment of Sensitive Dentine is not very complicated.

A solution of the chloride of zinc may be used with great advantage, by taking a small pledget of cotton on an instrument, and dipping it into the solution, and wiping out the cavity with it, being careful to keep the cavity dry. This will produce various sensations. In some teeth a slight feeling of warmth will be experienced, while in others a considerable pain will be felt; this will last but a few moments, when the cavity may be shaped at pleasure.

The salt is made by adding oxide of zinc to pure hydro-chloric acid, by the aid of gentle heat, until no more is dissolved. The solution is then evaporated to dryness, rubbed to a powder, and kept in a tightly-stopped bottle.

Another method has been tried, by the use of "arsenious acid." This is in my opinion a dangerous remedy, on account of its liability to cause inflammation and death of the dental pulp. Tannin and Morphia, have been used with success, and should find a place in every dentist's office. Creasote takes a high rank among remedies for sensitive Dentine. The solution of per-sulphate of Iron (Monsels) may also be used with effect.

Last year a young man called at my office to have his teeth put in order. He was suffering from indigestion at the time, and many of his teeth were decayed almost down to the gum; these I removed and replaced with an artificial set. On attempting to operate on the remaining teeth I found them so extremely sensitive that he could not bear the slightest touch of an instrument. After applying the chloride of Zinc in the manner described, I ordered prepared chalk to be used as a dentifrice three times a day, and in a week his teeth were plugged without any inconvenience.

The proper way is to vary the remedies, exhibiting them in succession, as the least promising one will sometimes prove the most effective;

always keeping in mind the object to be obtained by a medicine, and applying it in the most intelligent and delicate manner.

The reason of ill success on the part of many operators, is, on account of hurrying up their work ; not giving the dentine time to recover from the inflammation excited by the treatment preparatory to the operation, but introducing the foil with the patient in pain. The consequence is a poor plug, which will be apt to crumble away in a very short time.

REFINING SCRAPS—GOLD, PLATINUM, &c.

BY W. P. HAYWOOD.

WE will suppose all the silver is removed from the scraps and filings by the process described in the last number of the "QUARTERLY." We have now the gold and platina in combination to separate, with still a small quantity of iron, which for reasons already given, will not be acted upon by nitric acid. The metals left after removing the silver, should be washed free from nitric acid, then treated to a dose of muriatic acid for three or four hours, aided by a gentle heat, over a sand bath. This will remove all the iron. Then, after washing until free from acid, dissolve the metals left, in four parts muriatic, and one part nitric acid.

To regain the gold, which is the most important, as the small amount of platina in dentists' scraps will not pay for the trouble of separating and collecting it, make a saturated solution of protosulphate of iron, (green copperas,) filter it, and add to the gold solution until there ceases to fall down a dark muddy brown precipitate. In this process the gold and platina solution must be previously evaporated until nearly dry ; then add distilled water, and then by degrees the solution of iron. By evaporating the solution of gold we get rid of an excess of nitric acid, which would otherwise convert the protosulphate of iron into persulphate by the action of nitric acid on the former, giving off nitrous oxide gas. The persulphate of iron will not precipitate gold to any extent. If, after evaporation, the gold solution is too weak to form a vigorous precipitate, add a small quantity of muriatic acid. A solution of any metal should be as strong in that acid which facilitates its being precipitated by its proper precipitant as it will possibly bear, to give the best results. A weak solution gives a light flocculent minute precipitate. A strong solution, if not overheated, gives a coarse one. It is only necessary to wash the brown precipitate free from acid, and after partly drying, melt with borax.

[HARD RUBBER OR VULCANITE BASE.]

BY DR. W. P. HAYWOOD.

BELIEVING that a full description of the manipulation of vulcanite base for artificial teeth will meet the approbation of a majority of the readers of the Dental Quarterly, I would respectfully submit the following :

After selecting the teeth, prepare the plaster cast by covering it the thickness you wish the plate to be with either gutta percha or white wax ; (most manipulators prefer the latter after once using it ;) then grind and fit the teeth to the wax plate ; if block or gum teeth, grind the joints so they will present when together, a V-shape, the open part on the backs or lingual surface. When the teeth are fitted to their place, take a roll of white wax, melt over a lamp, and let the wax run around the pins flush with the base of the teeth ; then flow the wax around the base of the gum on the front, or labial surface, to form the rim ; then, with the wax modeling iron, (an instrument made of steel, about eight inches in length, the ends of different shapes and sizes, with a wooden handle about two and a-half inches in length, riveted on the middle of the instrument,) heat this modeling iron over a spirit lamp and smooth the wax off with it. When all is ready for the flask, soak the plaster cast a few minutes in water : this will enable you to cut it more readily, and insure a better adhesion of the fresh plaster to be poured on it. Cut the bottom of the cast off, so that the lid of the flask will go on without danger of touching the cutting edges of the teeth ; then mix up fresh plaster and pour it into the bottom of the flask ; dip the cast in water and place it with the teeth up, in the fresh plaster, being careful to get the cutting edges of the front teeth as near the rim of the flask as you dare, say a-quarter of an inch ; scrape off the excess of plaster, and when it begins to harden, dip the finger in water and run over the new plaster with it ; this will give a smooth surface. Next varnish over the surface to be parted from with spirit varnish, or with soap and water. An excellent article for this purpose, is the prepared parting soap. (See March No. Dental Quarterly.) If varnish is used, let it dry and then grease the surface with sweet oil ; pour the plaster in the flask until it is full, let it stand until the plaster begins to get mushy, then add a little more plaster and tap down the lid to its place and screw tight ; set aside in a cool airy place for half an hour. If wax has been used, open the flask cold ; if gutta-percha, place on the stove until warm enough to handle comfortably, and open.

After the flask is opened, remove the wax or gutta-percha with any suitable instrument; then heat both sides of the flask, in order to melt off any remaining particles of wax, &c., that may adhere to the pins and recess or rim. With a sharp knife cut a channel about a quarter of an inch in depth and width, V-shaped, all around that part of the flask containing the impression of the teeth, and as near the base as you dare, without encroaching on the part previously occupied by the teeth. This groove is the best contrivance I have yet seen for the escape of the surplus rubber; it only wants a fair trial to make it popular. I am indebted to Dr. W. P. Henry, of Philadelphia, for a practical demonstration of this surplus channel or groove.

The next thing to be done is packing the rubber or prepared vulcanite. This requires experience to enable the operator to judge of the precise quantity to be used; but a novice can form a rough guess by the thickness and general bulk of wax or gutta-percha removed from the cast. First cut out a pattern of lead or tin, the size of the working cast, or rather the size you have laid out in wax on the cast; then lay the pattern on a sheet of prepared rubber, and cut out a piece to fit. Next take a sheet of tinfoil about three times the thickness of that used for filling teeth; cut it the size of the rubber, then coat the tinfoil on one side with shellac varnish, or, better still, a paste of wheat flour; place the foil, paste side down, on the working cask, smooth over with the fingers until nearly dry, then with a burnisher smooth over the whole surface; press the foil into all the depressions, taking out the wrinkles, and in proportion to the smoothness of the foil so will the palatal surface of the finished plate be. Then place the rubber on the tinfoil and cast, and heat up in a stove, oven, or any suitable place until the rubber is quite soft and sticky; then carefully press the edges of the rubber in the space for the rim. By cutting a small V-shaped piece out of each end covering the tuberosities, and pinching them together, it will give a better shape to and help hold the rubber in position; then, having that part of the flask containing the teeth already as hot as you can well bear to hold in the hand, with a brush sweep off all dirt and wax around the pins and between the joints; then take common tinfoil used for filling teeth, and plug between the joints. Do this as well as you would fill a tooth, and burnish off smooth. This prevents the rubber from going through the joints. Then take long, thin strips of prepared rubber—say an eighth of an inch in width—and pack it while the flask is hot around the pins, and fill up the base of the blocks. Then heat up both sections of the flask until the rubber

is quite soft and sticky ; place them together and put your foot on the flask, and by degrees let your whole weight come down on it with a rocking motion. Then put in the screws, and screw down until it is moderately tight. If the flask is not quite up together, heat again, and set up the screws until the flask is up to its proper place. Take a piece of the same rubber that your plate is composed of—say one inch long and quarter of an inch in width—and place it half an inch under the plaster in the flask for a test. This can be done while pouring the plaster in the flask, or after packing. Remove the lid.

Now put the flask in the vulcanizer, cover over with water, then grease the screws, and screw on the lid tightly ; if it leaks, take away from the fire or lamp, and screw up while hot. When the case is vulcanized, which will be from thirty minutes to three hours, according to the kind of machine used, or the amount of heat employed, or adjustment of thermometer. I have seen Whitney's Vulcanizers, when the thermometer stood at 320° , in one case vulcanize in less than thirty minutes ; in another, with the mercury at the same point, it took two hours and thirty minutes. It will take some time to get acquainted with a new machine. I think Whitney's is among the best in the market.

When your case is quite done, which will generally take two hours, with the mercury averaging 320° , remove it and examine the test. If done, carefully cut away the plaster. Wash off with a stiff brush and soft soap ; wipe dry, and with a stick dipped in nitric acid remove the tinfoil ; file wherever it is possible to use a file. Scrapers should be used as little as possible, on account of leaving an irregular surface. The file or file wheel on a lathe, and sand-paper, is all that is required to prepare the case for polishing. To polish a case with neatness and dispatch you want a soft wooden wheel, a cork wheel, and a pretty stiff brush wheel, and a felt wheel. Use the wooden wheel first, with fine powdered pumice stone, or, still better, very fine sillex, and plenty of water, until all the scratches are removed from the plate ; then with the cork wheel and whiting and water, or, better, alcohol, go over the surface, and you will have a very nice polish ; lastly, for a high polish, use the brush or felt wheel, with tincture of iodine.

In all these manipulations in polishing bear in mind that you must turn your lathe very slow when you bear on hard, or you will overheat the plate, and in place of growing smoother it will get more rough. Bear on very light, with a quick stroke, for a fine polish. It is necessary that your corks and wheels should run true ; to accomplish this, take the iron spindle out of the head of the lathe, drive a piece of hic-

kory or any hard wood into the spindle socket, and turn it off with a chisel the size you want, when, if you can turn true, you will have a true spindle, and can turn off true work, no matter in what condition your lathe is. If you use tincture of iodine, you must soak the case for half an hour in aqua ammonia, diluted with water one-half; then wash with soap and water; lastly place the case in a tumbler, and cover with alcohol; put a glass cover over the tumbler, and set in the sun for half a day; this will bleach it and give a better color. Always after bleaching soak the case an hour or two in aqua ammonia, concentrated.

Gilding rubber plates can be accomplished only with difficulty, and will not pay the operator for his trouble. It can be done by a very expert manipulator in this way: In place of tinfoil as we have directed for a coating over the palatal surface of the working plaster cast, use very heavy gold foil, and pack the case full to repletion; use as heavy pressure as the blocks will stand, then give double the time in the vulcanizer, run at 340° on the last thirty minutes. This will fasten the gold foil permanently, and makes a nice finish as far as it goes. If you wish to gild on both sides, the wax must be trimmed to the exact size the plate is to be, and then both the working cast and its matrix must have gold leaf pasted on before packing. Use wheat paste for this purpose. Spirit varnish is the best for fastening tinfoil, because it will leave the rubber plate much better than when flour paste has been applied. In this case, where both sides are gilded, it leaves the edges bare and uncouth. Another method to gild is to immerse the plate, after polishing, in a solution of the terchloride of gold (Au. cl_3 .) and submit it to the hot fumes of phosphorus dissolved in ether. This looks very pretty, but will not polish, burnish, nor wear any length of time.

For the past three years, or in fact ever since the practice of quick time in vulcanizing has been adopted, complaints of spongy rubber have been from time to time made by dentists. The causes are many, and quite easily accounted for: 1st. If a case be overheated in packing. 2d. If the heat be brought up too quick in the vulcanizer, and at too high a point of the thermometer in the commencement of the process. 3d. When the boiler runs dry, as it sometimes will when too much steam has been allowed to escape, either by leakage in packing or valve. We never saw or heard of a vulcanite base being porous yet that we could not trace the mischief to some one, if not all, of the causes just mentioned.

A good, safe plan in vulcanizing is to have the boiler pretty large—say room for one case more than you vulcanize; plenty of water; a

safety-valve to allow the air and a little steam to escape in the early stage of the process; a small block of wood—say three quarters of an inch thick, and large enough in diameter to go to the bottom of the boiler freely; let the flask rest on this block. Use a thermometer; be sure it is a good one, free from air or vapor of mercury. Run the heat gently up to 300° , or 305° , at most for one hour; then increase the heat from 310° to 315° for the next hour, and finish on the last hour from 320° to 330° , making altogether three hours.

TESTING VULCANIZERS

BY W. P. HAYWOOD.

FILL the boiler as full of water as it will hold, screw on the lid, and, if there is a valve, fasten down or load as heavy as it will ever require to be at the highest point of the mercury for vulcanizing; then apply heat, which will cause the water to expand, long before it reaches its boiling point, with great force, and if there is a leak in the packing, or the boiler is otherwise defective, the water will ooze out.

THE ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A MEETING of the society was held on Thursday evening, October 4th, at the Dental College. Dr. Wm. P. Henry in the chair. The following paper was read:

"PATHOLOGY AND TREATMENT OF DEEP-SEATED DENTAL CARIES."

BY JOS. RICHARDSON, D.D.S.,

Late Professor of Mechanical Dentistry in the Ohio College of Dental Surgery.

Gentlemen of the Odontographic Society of Pennsylvania: In what follows I shall endeavor to present for your consideration, as briefly as possible, some reflections on the *pathology and treatment of deep-seated caries*.

All will concede, I apprehend, that the highest and most uniform success attainable in the treatment of diseased states of the teeth and surrounding structures is that which follows upon an exact and comprehensive interpretation of the pathological conditions to be treated. In proportion as the practitioner falls short of this requirement will his practice become empirical, and his success uncertain. With the due distrust of my own opinions, I may be allowed to express the belief that the pathology or existing conditions of deep-seated caries, uncomplicated with organic lesions of the pulp, is most fully understood, and if I can present any thoughts which may lead to a better understanding of what is a matter of practical concern to all of us, I shall not have consumed your time in vain.

In discussing this subject, I desire to exclude all those cases of actual uncovering, or exposure of the pulp, confining myself to a consideration

of those in which the nerve is shielded by a thin layer of bone or animal matter. I take it for granted that in excavating to fill such a cavity with a view to the preservation of the nerve, the approved method is to allow that portion of partially disintegrated bone or animal substance lying immediately over the pulp cavity to remain undisturbed, inasmuch as it is better than any artificial substance that could be introduced for purposes of protection. Next to those cases of absolute exposure of the nerve, these are the most unmanageable, and the treatment, having in view the preservation of the pulp, the most uncertain in its results. Medicate as we may prior to filling, subdue pain and irritability, arch over the cavity, interpose non-conducting materials, fill carefully and skilfully, and yet many of these cases prove intractable, and defy our best directed efforts to preserve the vitality of the nerve unimpaired, or rescue it from death. There are two leading causes generally supposed to induce this result.

1. *Mechanical pressure*.—That pressure upon the nerve is competent to produce its death no one will doubt; that it is the immediate and exciting cause in many instances is perhaps equally true. If there remain but a thin lamina of flexible bone or animal matter covering the nerve, and the filling is impacted in such a manner as to produce inward displacement of the interposed substances, in ever so slight a degree, the pulp will suffer injury. But it should be remembered that in all such cases uneasiness or pain, of greater or less violence, would follow *immediately* upon the operation. This is, however, by no means the case in a majority of operations resulting unfavorably. Untoward symptoms ordinarily ensue after a lapse of time. Again, according to my own observations and experience, the results in the treatment of these cases are not materially modified by the use of *plastic* fillings, in the employment of which the idea of pressure is fairly excluded. We may safely affirm, therefore, that while pressure upon the nerves is competent to produce and doubtless often does produce death of the nerve, yet many fatal cases occur not at all traceable to this cause. The most prevalent notion, however, as to the causes inducing death of the nerve in these cases is that of

2. *Thermal influences*.—I do not question their capability of producing serious disturbance of the pulp, or of inducing its death, but, as an exciting cause to such results, I think it has been greatly exaggerated, and I submit it to the judgment of members whose experience must have afforded ample opportunities for observation, whether, in many instances, fatal terminations in these cases have not occurred entirely independent of the operation of such causes. Is not this explanation frequently rather a matter of convenient inference than one founded upon positive or even plausible evidences of facts? In this connection, it becomes a matter worthy of consideration how much more the pulp may suffer injury from impressions of heat or cold acting through a conducting medium than when applied immediately to the surface of the carious opening. It might be supposed that a pulp almost entirely denuded, and exposed to the direct contact of hot and cold fluids, or draughts of air, together with the constant presence of fluids and other matters of

an irritant character, would be more likely to be injuriously affected than when the latter were entirely excluded by an impervious conducting material, through which impressions must be indirectly communicated to the pulp. Would the sensibility of the cuticle, for example, be less affected by applying to the surface a very cold or hot substance than if that substance were applied with a conducting material interposed? It might be reasonably supposed, I think, that the pulp would suffer most injury from extremes of temperature while lying exposed to their more immediate influence, and that a filling would rather prove protective than otherwise, especially as it excludes chemical and other irritants. But in a majority of those cases of deep-seated caries, where the nerve is not actually exposed, and which it is esteemed judicious to fill, there is previously nothing more than exalted sensibility, or some slight sense of uneasiness in the tooth—often none at all, and the first disturbance of a serious nature that occurs is that which follows upon the operation of filling.

If our premises are right, does not the conclusion follow that there are other causes than either mechanical pressure or thermal influences operating in those cases of disaster to the nerve not clearly attributable to the agency of the latter?

It is my purpose to attempt a solution of this question, and I invite your candid criticism of the views I shall offer.

As a type of the class of cases under consideration, let us take a deep-seated cavity in a molar tooth. In preparing it for filling, we find covering the nerve chamber but a thin layer of partially disintegrated bone, or more frequently, perhaps, a deposit of condensed animal matter. The patient has not suffered any continuous or considerable pain in the tooth at any time, and has only found it sensitive to impressions of heat or cold, or to the action of other local stimuli. Such, briefly, are ordinarily the conditions present in cases where it is esteemed prudent to fill without destroying the nerve. The condition of the pulp, judging from symptoms and the previous history of the case, does not seem to demand any special medication, and after the precautionary measures usually adopted, as treatment with creasote, etc., perhaps capping or arching over the nerve, or interposing some non-conducting material, the cavity is filled, and the patient dismissed. In the case of a patient of unusual recuperative energies, and where all the conditions of health are more than ordinarily favorable, an operation performed under such circumstances may have a successful issue, but *failure* is the rule. In our judgment the secret of ill success in these cases lies in a too implicit reliance upon mere symptoms, and a faulty apprehension of the morbid condition of the pulp at the time. That condition, in our judgment, is one of the confirmed *passive or atonic congestion of the vessels of the pulp*. The progress of decay has been gradual, and of long continuance, and for many months the pulp has been exposed to the baleful influences of various irritating agents, as sudden atmospheric vicissitudes, hot and cold fluids, and the continued presence of decomposing alimentary matters and vitiated secretions, lodged within the cavity, acting persistently as irritants to the nerve. Can it be supposed for a

moment that the circulation in the pulp will maintain its normal condition under such circumstances, even though no symptoms of active disturbance be present? On the contrary, may we not infer that in an organ of such extreme delicacy, vascularity, and sensibility, serious functional derangement must ensue? that vascular excitation, hyperæmia, and congestion of the vessels must be ultimately and permanently established? Reasoning from analogy, may we not also infer that, with long-continued plethora, atony of the vessels must exist in a greater or less degree at the period of decay we are considering? Now, a very constant result of asthenic or atonic congestion of a part, or organ, is *serous effusion*; familiar instances of which will occur to you. Is there any reason why the pulp of a tooth similarly affected should not be subject to the same laws that determine effusion in other organs? That it occurs in all cases of congestion of the vessels of the pulp I do not claim; but that it is a concurrent condition in very many cases I cannot doubt.

If, under such circumstances, effusion takes place, it cannot, of course, on account of the limited capacity of the pulp chamber, accumulate, as in the case of effusion into soft or cellular tissues, or into cavities, and has but one mode of escape—that of permeation of the remaining layer of bone or animal deposit, and thence into the cavity of decay. Without this drainage, we should unquestionably have earlier and severer symptoms of disturbance in the pulp than usually obtain in these cases, and under no other circumstance could it resist for so long a time the pernicious influences operating continually to effect its disorganization and death. The very absence of more active symptoms in these cases, and their remarkable exemption from severe and abiding pain during the progress of decay in its latter stages, can, it seems to us, be explained only on the presumption of atonic congestion and effusion, since the former is ordinarily characterized by *diminished sensibility*, while the latter relieves by direct depletion of the vessels.

Under the conditions mentioned, an *impervious* filling is introduced. In a few hours, or days at most, the patient returns with pain in the tooth. It is a continuous ache; at first slight and dull, but increasing all the while in violence. In due course of time the symptoms become actively inflammatory, and unless prompt relief is afforded, suppuration and death of the nerve follows. If this issue is not clearly referable to causes ordinarily operating to produce irritation or inflammation of the pulp, we know of no presumption on which it can be so rationally explained as that of serous effusion. The impervious filling at once shuts off the customary discharge, which is then poured out between the investing membrane of the pulp and the walls of the chamber, confining it within the pulp cavity, the nerve soon becoming close-pressed in its unyielding, bony cell. Following this effusion we have exalted sensibility from unwonted compression of the nervous mass, inducing greatly increased vascular excitement and flow of blood to the part, and unless relieved this engorgement will quickly proceed to active inflammation, and from that to death of the nerve.

The liability to asthenic plethora of the pulp and serous effusion will be greatly modified by the constitutional habits of the patient. They

will be most apt to occur in persons of lax fibre or impaired tonicities of the capillary circulation, and in cases characterized by an impoverished or watery condition of the blood.

If the pathological views advanced are correct, the indications of *treatment* are plain. It will always be hazardous to fill such cavities with an impervious substance until the normal tonicity of the vessels of the pulp is restored, and congestion relieved. To effect these objects, it has been my practice, after a careful preparation of the cavity, and without any preliminary tampering with the nerve by medication, to fill temporarily the carious opening with a mixture of plaster of Paris, partly with the view of excluding irritants, but chiefly as an *absorbent* of effused fluid, until such time as by the use of counter-irritants to the gum the congestion of the pulp may be supposed to be relieved. As an application to the gum, I rely almost exclusively upon the tincture of iodine, which may be applied once a day at first, and less frequently afterward. I allow the plaster filling to remain from four to six weeks, renewing it if necessary. When admissible, constitutional treatment might in some cases be advantageously adopted, as the occasional exhibition of saline cathartics, and the use of tonic and astringent remedies.

Dr. McQuillen favored thoroughness in the performance of all dental operations, and removed all softened and decomposed structure found in a tooth, believing that "a little leaven leaveneth the whole lump." There was enough of bad work done, even where the greatest care was exercised by competent operators, and it was not advisable to increase this by giving encouragement to the slovenly and incompetent. In advocating the removal of all decayed structure, he did not wish to be understood as favoring the removal of the blackened but hardened dentine frequently found in the bottom of cavities, as this was by no means in a disorganized condition.

Dr. Ellis favored the practice of leaving softened dentine in the bottom of deep cavities, where its removal would endanger exposure of the pulp. He was in the habit of first applying precipitated chalk, made into a paste by mixture with aqua ammonia, and temporarily stopping the tooth for two or three days with cotton and gum sandarac. If at the expiration of that time the tooth had remained perfectly comfortable, he would fill permanently, first, however, renewing the application mentioned, spreading it upon a piece of linen cloth, trimmed to fit the bottom of the cavity. Under such treatment he had met with success.

Dr. Flagg regarded it as good practice to leave such partially decomposed dentine in the bottom of cavities as by its removal would endanger the exposure of the pulp. He had adopted this course at the suggestion of Professor Arthur, some eight years since, and had proved the value of the treatment by repeated examination of cases, in the presence of other practitioners. He found the dentine often discolored, not eburnated, but rather in a "vitrified" condition. Of course, had a per cent. of failures. Regarded the chalk simply as an antacid.

Dr. Henry always removes decomposed dentine, and finding the pulp exposed, considered that the decay, not the operator, exposed it.

THE NEW YORK INSTITUTE OF DENTAL SCIENCE AND ART

Was opened on the first of December in New York City. From what we can glean, it seems to be under the patronage of the Dental Societies of New York, and Brooklyn, who have elected the following Instructors:

W. H. Atkinson, D. M., D. D. S., Institutes of Dental Science and Art.

C. P. Fitch, M. D., Anatomy and Physiology.

J. S. Latimer, D. D. S., Operative Dentistry.

John M. Crowell, Artificial Dentures and Appliances.

John Allen, D. D. S., Chemistry and Metallurgy.

The invitation to be present at the Introductory Address, did not reach the "Quarterly." We cannot therefore enlighten our readers in regard to it, or to the entertainment which we suppose followed. We hope that the college will not exert an evil influence upon the practice of the "small fry" of the Metropolis—that the rush to our friend of the show case in the Bowery, will in no wise be diminished—that the *dead head* clinic patients may be those who *deserve charity*, and not the belles of the city, disguised in calico dresses and dirty nubias, robbing the student of what might have been his future practice. We wish our friends success, and hope that we will not be slighted at the commencement.

ITEMS.

WE have received a letter from Leipzig, requesting us to exchange with "The Dentist," a journal published for the last twenty years. It will afford us much pleasure thus to have intercourse with our German brethren, and we trust that the "Quarterly" will reach them safely and in due season.

WE *occasionally* get a glimpse of the "Dental Register of the West," laden with its pleasing and varied matter. We like the style of the editor, for its plainness and beauty, and think it worthy of imitation by many who seem to glory in ambiguous phrases. A plain writer and one who confines himself to terms in *general* use among the learned of the Dental and Medical professions, is best calculated to impart knowledge.

THE present number will finish the third volume of the "Dental Quarterly." Odd numbers of any volume will be supplied by Johnson & Lund, at twenty-five cents per number. Those wishing the separate volumes bound in a handsome style, can send in their orders at once.

THE Dental Colleges have been open for the season, since November the first. The Professors are at all times pleased to see members of the dental and medical professions, and invariably take the pains to show

them through their rooms. A day cannot be spent more profitably than in listening to the lectures and examining the valuable collections interesting to dentists, to be found there. The Philadelphia College is on the northwest corner of Tenth and Arch Sts., and the Pennsylvania College is on the southeast corner. The Colleges will not, we believe be closed during the holidays.

CORRESPONDENTS sending essays for publication will please remember to write on but one side of each leaf. We do not care to publish anonymous communications, only in exceptional cases. The full name is therefore desired. Anything of interest, whether it will take up one half, a whole, or many pages is respectfully solicited.

THERE has recently been imported an article called "Powdered Calcined Buck Horn," used for removing light deposits of tartar and polishing the teeth after scaling. We would recommend a trial of it.

VARIETIES.

VERY OFTEN men cut their love teeth, as they do their wisdom teeth, very late in life

"WHAT a frail thing is beauty" said Baron de Kieth, when he found that his true love had blue carious teeth.

MISS UVULA wishes to know if the best writer upon sore throat was De Quinsey?

THERE are corks sold at the dental depots, turned especially for finishing rubber. When screwed on a lathe, it takes but a few moments to give a nice polish to the rubber.

It is said that Dr. Harris of this city, has inserted a cast iron set of upper teeth, finished highly and plated with silver. The gentleman for whom they were made, having powerful muscles of mastication, with well formed lower molars and bicuspid—has, to use a familiar phrase, *chewed up* three silver sets mounted in the ordinary way.

DISSOLVE ten parts of clear grains of mastic, five parts of camphor, fifteen parts of sandarach, and five of elemi, in a sufficient quantity of alcohol, and apply this varnish without heat to workshop tools, and they will be preserved from rust; this varnish will retain its transparency, and the metallic brilliancy of the articles will not be obscured.

A CHEERFUL life must be a busy one, and a busy life cannot well be otherwise than cheerful. Frogs do not croak in running waters. Active minds are seldom troubled with gloomy forebodings; they come up only from the stagnant depths of a spirit unstirred by generous impulses, or the blessed necessities of honest toil.

PARAFFINE was discovered about 1830, and by two separate chemists at the same time. Christeson of Edinburgh found it in Rangoon petroleum. In appearance and in substance, it resembles the spermaceti of the whale and the white wax of the bee, or certain plants. It is called paraffine, from *parum affinis*, having so *little affinity* for other bodies.

A LITTLE boy named Green, four years of age, died in New York, recently, under singular circumstances. It appears he had been suffering with great pain in his teeth, and Sunday morning his father took him to a dentist to have the painful teeth extracted. Two were removed without trouble, but on drawing the third one the child was seized with cramps or convulsions, became black in the face, was soon reduced to insensibility, and was in a short time a corpse. The coroner made an external examination of the body, and in his opinion, the pain consequent upon the extraction of the teeth, and the fright natural to children under like circumstances, produced congestion of the brain, and this was the cause of death.

M. MONTEGNY, French Consul in China, in reference to the use of arsenic by the northern Chinese, says they mingle it with their smoking tobacco. According to missionaries who have lived along time there, tobacco free from arsenic is not sold. The same witness assured the French Consul, that the arsenic smokers were stout fellows, with "lungs like a blacksmith's bellows, and as rosy as cherubs." The publication of M. Montegny's statement has called out a letter from Dr. Londe, who announces, that some years ago, in the course of a discussion at the Academy of Medicine, on the agents to be employed to cure tubercular consumption, he told the assembled doctors that he had found but one successful means of combatting this dreadful disease, and that means was the smoking of arsenic. The doctor reaffirms his recommendation of the remedy.

MERCURY, after being extracted by the plain process of retorting, is seldom quite pure, and generally contains a small proportion of other metals. The eminent naturalist, Priestly, suggests a very simple method to purify mercury, by merely shaking strongly in an iron flask, and renewing the air in the same, repeatedly, with a pair of bellows. By this manipulation a black powder will be formed on the surface, which can be easily separated. If no more of this dust is formed, the quicksilver may be considered pure. In this state it will always give a clear sound when agitated in the flask, while an admixture of lead will make it sound dull, as if the vessel was made of potter's clay. It is often found in the market wilfully adulterated with lead, tin and bismuth. This adulteration can readily be discovered by rubbing some of the metal on the open palm; if it soils the skin, it is adulterated; if pure it leaves no trace. Besides, if dosed with lead, it will leave a tail behind, *il fait la queue*, to use a French expression, that is, the drops, instead of being globular, will assume an elongated form, and more or less flattened surface.

WHAT is animal life? This question has perplexed the world for ages, and is still in dispute. If the medical faculty could solve it, they would have a key to the origin of all diseases, and need no longer treat by guess, as they frequently do now. The priests of Chaldea and Egypt consulted the stars upon the subject, but obtained no answers of any practical value. The Greeks studied the laws of nature thoughtfully, but failed to fathom the great secret. Modern doctors have argued the point very learnedly, and given us a multitude of theories thereupon, but the common sense of mankind is not entirely satisfied with any of them. Neither the subtle logic of the metaphysician, nor the knife of the anatomist, has been able to determine what animal life is. Pythagoras, and most of the ancient sages believed the vital spirit to be invisible fire. Epicurus, who, by the way, was a man of immense mind, and not, as many suppose, a two legged pig who grovelled in the mire of sensuality, insisted that it was composed of heat and gas. Among the moderns, John Wesley, Dr. Priestly, Sir Humphrey Davy, Abernethy, and many others, maintain that electricity or magnetism is the animating element. The late Dr. Metcalfe held caloric, or latent heat, to be the base of vitality, and supposed electricity, its emanation, to be the active vital principle. That atmospheric heat is intimately connected with this principle is evident, from its influence in the production of innumerable forms of animal and vegetable existence.

Of the million and a-half of animal and vegetable species which the earth is estimated to contain, probably three-fourths inhabit regions where there is no winter. The whole tropical ocean may be said to be alive, while within the arctic circle, life is sparsely scattered, and what there is of it is comparatively sluggish. Summer, in all latitudes, is the nurse, if not the parent of myriads of existences; and it is obvious, that if the world were deprived of solar heat, every living thing would die. We know that when the vital spark has been apparently extinguished in fish and reptiles by the cold, it can be rekindled by the application of heat. Fish that have been frozen stiff, and have remained in that condition for twelve months, may be thawed back to life. This feat has been accomplished by a professor, who is now soliciting permission to congeal a few criminals condemned to death. He says, that after keeping them under the seal of Jack Frost for a year or two, he could warm them up and set them going again as new. Of course, nobody believes him. It may be possible to recall a frozen tadpole to life, but is beyond the power of science to summon back to its earthly tabernacle a departed soul.

The sum and substance of the whole matter is, that although heat and electricity are apparently essential to the developement of animal life, and to its revival after temporary suspension, its principle is beyond the scrutiny of man. The laws of life and motion we may investigate and determine, but their origin is a Divine mystery which reason cannot penetrate.

THE
DENTAL QUARTERLY:

DEVOTED TO THE INTERESTS

OF

DENTAL SCIENCE.

EDITED BY
AMBLER TEES, D. D. S., A. M.,
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THE DENTAL QUARTERLY.

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No. 1.

PAINLESS OPERATIONS.

THERE are radical and conservative men in the dental as well as in the political world. There are those who boast of giving no pain whatever; there are those who boast of the pain they are called upon to inflict, and there are those who boast of the pain they save. Many will do all in their power to save pain, even to the sacrifice of a tooth, whilst others consider it their duty to save that tooth, even if in so doing they give the most intense pain. We are prone to believe that the conservatives have the right of it, in their efforts to preserve the tooth with as little pain as possible; availing themselves of the benefits of the various obtunders of sensitive dentine; condensing either with the mallet or by hand pressure; thereby consulting in a lawful way the whims of the patient, if the one or the other method should be painful. Many consider it good practice to extract, rather than fill a very large cavity with amalgam; and many rather than extract it or fill it with amalgam, will work under water for an hour or two, in an excited and nervous manner, in their efforts to put in a gold plug. The conservatives will use Townsend's or Haywood's amalgam washed with salt water and alcohol, and assure the patient that the tooth will last for at least twenty years longer. The advocates of gold fillings will plug the teeth with gold though one half of them should burst in their endeavors to condense it. The lovers of ease and all plastic material, regardless of health or appearance, will stuff cavities all day long, with staid composure, and will go to bed happy and contented. The conservatives will place whatever material in the cavity they deem the best adapted to each particular case. There are those who will dose almost every patient visiting their office with chloroform or ether; and there are those who dread anæsthetics, and tremble at the smell of Letheon

Lotion; the conservatives use it in their practice, but do not give it to the consumptive or to the feeble, unless the family physician approves and the patient presses.

We cannot agree with those, who, whether lost to all sympathetic feeling or not, denounce anæsthetics in every shape and form. The extraction of a tooth, though called a minor operation, is often attended by pain as agonizing, and in certain cases as prolonged, as many of the more important ones in general surgery; hence, the introduction of anæsthetics should be hailed with as much delight by the dental, as the general surgeon; by the patient with the tooth-ache, as by the one with the broken limb.

Excavating cavities of decay, filling sensitive teeth, condensing fillings, more especially those put in approximal cavities, are operations always attended with an amount of pain varying with the state of the system and the general constitution of the patient. The attention of the humane and sympathetic of the profession has long been turned to the treatment of sensitive dentine, and there have been discovered several methods for the relief, to a certain extent, of this annoying and sickening pain. The most important of the substances for this purpose, brought to the notice of dentists, is, without doubt, chloride of zinc; it affords almost instantaneous relief when properly applied, enabling the operator to finish the filling at one sitting, an end to be desired both by the patient and the dentist. Continued applications, in the experience of many, only aggravate the trouble, besides discouraging the patient from having the work performed; the latter is more especially the case when under the care of one with a large practice; engagements being made at intervals of one, two or three weeks. A small piece of cotton moistened with chloride of zinc and applied repeatedly to the dry cavity whilst excavating the decay, together with the use of precipitated chalk, for a few days previous to the operation, is a plan considered to be the most applicable and successful in the majority of cases. In stubborn cases, arsenic applied on a pledget of cotton barely dampened with creasote, is the best agent; but unless the pain is very great, this should not be resorted to.

Many essays have been written on arsenic, and much controversy engendered in consequence thereof; but in spite of curling lips, the frowns of the advocates of *quick cuts*, the sneers of the incredulous, and the assertions of such that these essays are only so many advertisements of the writers, success in this direction has been successfully demonstrated. Dr. J. D. White, who has given much attention to the use of arsenic in sensitive teeth, in a recent article on the subject says: "In the majority

The tenor of many essays and daily advertisements lead many unacquainted with dental requirements, to suppose that operations *can* and *should be* performed in every instance without pain, pain being inflicted only by rough, cross, incompetent and inhuman operators. Dentists should be careful how they give assurance to patients in advance of an operation, of their being no pain whatever. Every practitioner knows, and patients will tell you, that there is much alleviation by the use of obtundents of sensitive dentine; but every practitioner knows also, that this is not the only difficulty to surmount. Condensing the filling, in many instances gives exquisite pain, and a momentary shock to the nervous system, to be obviated only by the inhalation of ether or chloroform, which in the majority of instances is impracticable. People, therefore, instead of being assured of *no pain whatever*, should rather be forewarned of *pain not beyond their power to endure*.

A. T.

BY DR. H. A. ROBINSON, FOXCRAFT, MAINE.

CASE 2. That of a young lady with *three left superior bicuspid*s; the two outside ones were regularly situated in the arch, and the third, as perfectly formed, and as well developed as the others, was inside, and midway between them.

CASE 3. During a visit to a brother dentist a few months ago, I saw him extract from the roof of a man's mouth, about half an inch back of the central incisors, a conical shaped tooth, with a root about a fourth of an inch long. It was evidently supernumerary, but I cannot conceive how it came to be in that locality.

CASE 4. A gentleman twenty-five to thirty years of age, came into my office a few days ago to have his teeth examined; they were found to be sound, but presented the following anomalous state: In the lower jaw one *deciduous* molar was remaining where the second bicuspid should be; on the opposite side the second bicuspid was wanting, and also both wisdom teeth of this jaw; but the remarkable part of this case, was the absence of *both superior laterals*, there being a wide space between the centrals, and a lesser one between each central and cuspidatus; there was also one bicuspid wanting here, making in all, seven teeth less than usual. The gentleman assured me that he had never had a permanent tooth extracted.

IMPROVEMENT IN VULCANIZED RUBBER WORK.

BY DR. J. W. MOFFITT, HARRISBURG, PA.

FROM the introduction of this style of work to the present time, there have been adopted by the profession many plans, with an object to save time in the manipulation of it, and to make more perfect work. The plan which I have adopted, and found to answer the purpose better than any I have heretofore used, I do not claim as having originated with myself, neither can I call to mind where I obtained it. From conversation with different members of the profession, I find that very few, I may say scarcely any, have given it a trial; therefore I wish to make it more generally known, believing that it will benefit those who may adopt it. After the piece to be vulcanized has been placed in the flask, and the wax or gutta percha removed, the section containing the teeth should be placed in boiling water, allowing it to remain from five to ten minutes, when it will be ready for the packing process. The rubber should be cut in small square and triangular pieces, and the joints of the blocks ground in a V shape, and filled in with plaster scraped from the outer edge of the case with the packing instrument. Proceed in the usual manner to pack in the rubber; the case being warm will soften it while packing, which renders it unnecessary to heat the rubber before packing. After this is accomplished,

pack the rim or band. This should always be made in the section of the flask containing the model, with strips of rubber, cold; then place the two sections together and bring them down slightly; put the flask in boiling water again, allowing it to remain until sufficiently warm for the parts to come together without much force. The case is now ready for the vulcanizer, where it is placed with the boiling water used in packing, which will take less time in bringing it to the vulcanizing point, 320° . Instead of allowing it to remain at this point for one hour or forty-five minutes, as has been the practice, I allow it to reach 340° ; counting the time from when the thermometer reached 320° . I allow thirty minutes for the vulcanizing process. After this is done I place the machine in cold water, taking care that the thermometer is not chilled. After the steam is condensed, and before the machine is entirely cold, it should be opened, and the flasks allowed to cool; or, if desirable, it can be placed in cold water without opening it, where it will cool more rapidly, without the least danger to the teeth, since the plaster investing the case will be found sufficient to protect them from the sudden action of the cold water.

REDUCTION OF METALS FROM ORES.

BY W. P. HAYWOOD.

DENTISTS are often presented with samples of ore, with a request to ascertain what kind of metal it represents. With some ores it is a very simple thing to test them and give a correct diagnosis, while with others, the dentist is surprised that with all his blowing and testing there is no result. The reason is plain: where the metal exists in a simply oxidized condition, it is only necessary to heat the ore strongly in contact with the fuel, by which carbon is supplied in abundance for its reduction. The carbon combines with the oxygen, and the metal is set free. It is not often that the ores have this simple constitution, but in many cases the metal exists as a carbonate, and then the carbonic acid being expelled by the first application of the heat, the oxide which remains is reduced by the deoxidizing action of the ignited fuel. The native carbonates of lead, iron, zinc, copper, &c., are simply reduced in this way.

If the mineralizing substance, however, be any other than oxygen, carbon, no matter how intensely heated, cannot produce any effect upon the ore.

Thus, the native sulphurets and arseniurets are not acted upon by carbon. Nor can the metals be obtained in a pure form from any of their salts except the carbonates, by means of carbon, for the oxygen of the acid and base being simultaneously removed by its agency, the radical of the acid remains united with the metal, which is thus only changed into a new kind of ore. For instance, if sulphate of lead be heated with any of the forms of carbon, it is converted into sulphuret of lead.

In the case of certain metallic sulphurets, the metal may be simply separated by melting the ore with a proportional quantity of a metal having a greater affinity for sulphur. Thus, metallic antimony is generally obtained by fusing the native sulphuret with iron. On the large scale, in order to extract the metal from its sulphuret, the ore is first reduced to a fine powder; it is then heated to redness in a current of air, by the oxygen of which the sulphur is converted into sulphurous and sulphuric acid, while the metal is oxidized. This is termed calcination. The oxide is to be intimately mixed with lime, and subjected to a reducing heat. The calcined mass still retains a portion of sulphuric acid combined with its base; the lime decomposes the metallic sulphate, combines with the sulphuric acid, and sets the oxide free; and when the deoxidizing flame passes over the calcined mass, the metallic oxide is reduced, and yields a pure metal.

HOW TEETH ARE DESTROYED.—BANEFUL EFFECTS OF SALERATUS AND CREAM OF TARTAR.

BY SAMUEL BAKER.

As a subject generally interesting and important to the public, I venture to offer some views of my own and others in regard to the articles that head this communication. First, I will give an extract from Mrs. H. B. Stowe's late work on England and Europe. She says (pages 21 and 22):

"How comes it that our married ladies dwindle, fade and grow thin—that their noses incline to sharpness and their elbows to angularity just at the time of life when their Island sisters round out into a comfortable and becoming fulness? If it is the fog and sea-coal, why then, I am afraid we shall never come up with them.

"But perhaps there may be other causes why a country which starts some of the most beautiful girls in the world, produces so few beautiful

women. Have not our close-heated stove-rooms something to do with it? Have not the immense amount of hot biscuits, hot corn-cakes, and other compounds, got up with the *acrid poison of saleratus*, something to do with it?"

Extract from an article in the *Boston Transcript* :—

"Cream of tartar and carbonate of soda are far inferior to common yeast for making healthy bread. More cream of tartar, carbonate of soda and saleratus are used in Boston in making bread, in one day, than are used in all Europe in one year. *It is the extensive use of these articles that is the cause of our young men and young women having decayed teeth.* In France, in the large cities, no one makes what we, in this country, call family bread; hence, the government is very strict in its laws regulating the manufacture of bread by the bakers. Officers are appointed to keep watch over them, and if detected in using or having in their bakeries, ammonia, saleratus, or carbonate of soda, they are subject to a heavy fine. We should have such laws in this city; then those of us who patronize the bakers would find the staff of life much better support than it is."

The well-known Dr. Alcott, in a letter to the *Tribune*, says :—

"Your readers know, perhaps, that we lose about 300,000 inhabitants of the United States every year; and, if they read all that has been written on the subject within a few years, that, in my opinion, not a few of these might have survived had it not been for the effects of saleratus."

He further says :—

"In 1855, a lady in Williamstown took about fifteen boarders—chiefly if not wholly young men attending college at that place. She was ignorant of fashionable cookery, but knew *rich* food was generally preferred. She had heard of saleratus, and that by many cooks it was freely used. Accordingly, she procured a quantity and freely used it. The warm biscuit were so full of it, as not only to give them a yellow or burnt appearance, but also to render them bitter or nauseous to the taste. Many other articles were filled with it in like manner. In endeavoring to make light puddings she used so much of the article as to make them almost as heavy as lead.

"The students called the puddings by the name of specific gravity; and when they wished for a slice would ask to be helped to some of the specific gravity. After the lapse of a few months, a disease broke out among the students so severe that many believed it contagious. Of the whole number, thirteen were confined for a long time—the fourteenth slightly affected for a few days. The house became known as the pest house. Two of the patients died, and another hardly escaped death. Eleven finally recovered."

To which is added, that the attending physicians, Dr. Sabin and Dr. Smith, never had any doubt that the whole was caused by *saleratus*.

To the above it would be easy to add many more cases, but let these suffice for the present. They may be called extreme cases, and I admit

it. So is delirium tremens an extreme case of drunkenness, and goes more strongly to prove the horrid and destructive evil. But the more particular object of this communication is, to awaken the attention of the community to the evil effects of cream of tartar, saleratus and carbonate of soda on the teeth. Having now for about a quarter of a century had an opportunity to witness their effect on these important organs, I think I can speak with some experience.

One of the most common questions asked of the dentist is, "Why do people's teeth decay more now than they used to?" and it is often accompanied by the declaration, "that my father, mother, or grand-parents used to have good teeth, and they say there were no dentists in their day;" and they might have added, neither of the articles above referred to was much in use at the time

It is now about fifty years since saleratus was introduced to the community. At that time there was but one dentist in Boston, and I may say in New England; he was sufficient for accidents, &c., and did a small business. There are probably at this time five hundred individuals in the business, and I should not be surprised (taking an average) that each does more business than he did. Now, why this great addition to the profession? Is it not by some great and general cause of the decay of the teeth? I am aware that a variety of answers might be made to this question, but too numerous to introduce here. I think if there was a soap introduced into the community (under the plea that it was more convenient) that should destroy the fingers, and the community still persist in using it, we should have another profession, called *fingerrists*, that would rise up if loudly called for.

I may be answered that the population has increased. This is true; but not five hundred times. Again, I may be answered that people have more done to their teeth now than they used to. Very good; they have it done because they need it done; but when they had "sound teeth" they did not want it. Again, it is said there are new inventions to preserve and supply teeth. Very well; new inventions do not come forth till the mother of invention calls for them. Children come into a dentist's office from two years old and upward, with sets of decayed and often horribly painful and offensive teeth. Certainly age cannot have much to do with the alarming evil. *Something else is the cause.* On going on board emigrant vessels, I have generally observed the people have good teeth. After being here some time, they go to have their teeth extracted; and they often say that, "my teeth did not decay before I came to this country." On asking them if they used saleratus or cream of tartar in their country, their answer has been invariably,

"No, never used it till I came here." I have three skulls that came from Paris, all of which have sound teeth. It would be difficult to obtain the like here, as to teeth.

Apologists often say that we use but little saleratus, while one open-hearted woman observed, "I used to get it in a *box*, but I had to send so often, I now get it in a *firkin*."

I do not think it is generally known how much of this article is used in the community. To satisfy myself, I took the trouble to ask each of the grocers in Portsmouth, how much saleratus and cream of tartar they sold in a year, and the amount of all was—*saleratus*, 50,198 lbs. ; *cream of tartar*, 15,100 lbs. Thus over twenty-five tons of the former, and more than seven of the latter, are probably used in Portsmouth and vicinity in a year ! Portsmouth has 10,000 inhabitants.

I subjected a handful of teeth to a strong and warm solution of saleratus, for about fourteen days ; the consequence was, they became as brittle as burnt bones. The same time I subjected some to a solution of cream of tartar ; the consequence was not the same, but equally, if not more injurious. This also may be called an extreme case, but subjecting them to common water for *fourteen months* would have but little or no effect on them. The saleratus removes the gelatine, the cream of tartar removes the lime, the two principal ingredients of the teeth ; and between the two evils the teeth stand a poor chance, and hence the result.

Some patients have observed, that they have been recommended to put a lump of pearlash or saleratus in a hollow or decayed tooth, for the toothache ; and on asking them the result, "why, it for a while cured the pain, but in a few days the crown of the tooth crumbled away." It would appear that this one circumstance is sufficient to convince any one, that in the article there is a principle most deadly to the life of the teeth, when it is well known that the crown or enamel of a tooth is by far the hardest of any bone in the body, for after the other bones have returned to dust, this part has been found apparently sound.

Let the importance of the subject be the apology for offering a few words, as they may be profitable to your readers. You will remember our late venerable citizen, John McClintock, hale and hearty at over ninety. I asked him if he, in his family, used saleratus or cream of tartar ? His reply was, "No ! THEY ARE BOTH POISON." All the physicians of the place whom I have conversed with, and among them the late Dr. Cheever, have agreed in saying that it was "bad stuff." One gentleman in town, having had a regular medical education, informed

me that at the time he attended the lectures, the professors and students went into a course of experiments to inform themselves, and that the result was that they were fully convinced of its hurtful and evil tendency. And when it has such apparently bad effect on the teeth, is it not reasonable to conclude that it has some effect on the other bones, and other parts of the system, and more particularly on the lining, or inner coating of the stomach, and in bringing on the somewhat modern disease, dyspepsia; and, more generally, may it not affect the blood and heart?

It may be well to say here that cream of tartar may be and is called an acid; saleratus and carbonate of soda are alkalies; both alkalies and acids in a great variety of shapes and mixtures are prepared, advertised, and recommended for cleaning the teeth. That they will generally do it, and sometimes suddenly, is true; but let me tell those that use for the teeth either acids or alkalies under whatever name or preparation, that it is generally well known, if persisted in a length of time, the general consequence is the destruction of the teeth; therefore, under all circumstances that relate to the teeth, have nothing to do with those ingredients in any shape.

To stop the use of these articles—saleratus, cream of tartar and carbonate of soda, now in so general use in the community—I think would be like trying to remove the White Mountains; but I feel it my duty to do my part toward calling the attention of the public to what seems to be a dreadful evil, of which in my situation, I cannot help being so often and painfully reminded.

HARD RUBBER.

BY W. P. HAYWOOD.

In concluding the subject of *Hard Rubber* I shall have to treat it promiscuously, for which I hope the readers of the *QUARTERLY* will excuse as unavoidable.

The first thing we shall notice (and we wish every mechanical dentist to notice it well,) is the cause of open and black joints, also of broken blocks. The cause is plain and easily remedied. When the case is ready for the flask, soak well in water, then cut down on the back part of the cast so the cutting edges of the front teeth (when the cast is placed on a level surface) will point towards the tuberosities, or in other words, so the cutting edges of the teeth will tip back of their centre, inclining towards the back of the cast. Any person acquainted with the laws of mechanics will see at once that when teeth are placed in a flask with

their inclination outward, the mechanical force exerted to force the rubber around the base of the blocks and specially around the rim, will have a tendency to throw the cutting edges still further in their line of inclination, unless, there is some counter resistant equal to the force applied. Now we all know from practical demonstration, that plaster-paris is not equal to this force. But we do know that porcelain is. In other words, when several curved sections of teeth are so placed in plaster that their inclination will be inward, thus bracing one joint against another, the more force we apply the closer will be the joints. This law of mechanical force has been almost entirely overlooked by dentists and the result has been very annoying to all parties concerned. It is seen daily in gaping black joints, occasionally blocks with gum split horizontally, transversely, &c.

Packing Joints—There has been some little ingenuity displayed in packing joints, but it is rare that we see a neat job. Some advocate filling the joints with a composition of *protosulphuret of mercury* or *factitious cinnabar* and plaster; plaster-paris and silicate of soda, and various other substances equally obnoxious. Does it never strike the dentists' minds that any substance susceptible of absorbing and retaining the fluids of the mouth like those just mentioned will prove a source of annoyance to the patient's nose, and an argument with some against the use of Hard Rubber as a base?

The only proper material for packing or plugging joints which we are at present acquainted with, is gold, or tin foil. The only dentist we ever knew who used gold foil, always made beautiful joints, and he says it pays his conscience to use it. I would suggest a compromise, *i. e.*, pack in a small leader of gold foil first, then back up with a full charge of tin foil, well rammed home.

If the joints are wedge shaped, no matter what substance is used for filling them, it will keep the rubber out. unless the blocks are thrown apart in packing the rubber in the flasks: on the contrary if the joints are ground parallel, no matter what we use for filling, it will always be forced through, and the rubber will take its place.

Quantity of Rubber for a Case.—Dr. Cranshaw, of Frankford, Pa., (the same gentleman who uses gold foil for packing joints) says he always uses twice the weight of wax in rubber. If the wax removed from the case weighs four dwts. he takes eight dwts. of rubber and this is just right to fill the case.

Bleaching Rubber, Presence of Free Mercury, &c.—I have my doubts and always had of the entire immutability of hard rubber as prepared for dental plates. I have however failed to detect the pre-

sence of free mercury ; yet there are some features analogous to certain chemical preparations of mercury that ought to be noticed.

First :—The development of the coloring principle of factitious cinabar. When this article of commerce (red vermillion as it is commonly called) is first made, it is rather a dark red, but when finely levigated and exposed to strong light, in flat dishes covered with a thin layer of water, it gradually assumes a very brilliant color. The rubber plates will take the same color, but not so intense, and by precisely the same means ; water acting the same as alcohol.

Second :—The color of the sulphuret of mercury is brightened by the action of a warm solution of caustic potash. So also are the rubber plates. When mercury is dissolved in an excess of nitric acid by heat, the salt known as the *nitrate* of the *red oxide* of mercury is formed. When a vulcanized rubber plate is exposed in the same acid, a similar resultant is formed.

If there is any danger to be apprehended from the use of tinc. of iodine in polishing rubber plates, in forming iodide of mercury, hot water of ammonia will remove all the evil.

THE ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A MEETING of the society was held on Tuesday evening, December 6th, at the Philadelphia Dental College. Dr. Wm. P. Henry in the chair.

Dr. Moffat of Harrisburg exhibited a specimen of his style of artificial dentures, denominated non-sectional block-work on platina. The teeth and gum are of the same material, baked upon the platina base, and when finished, present the appearance of continuous gum-work. The work was patented in 1860, but is now offered to the profession.

Dr. Flagg moved a vote of thanks to Dr. Moffatt for his liberality in presenting his improvement to the profession.

Dr. Tees wished to give his testimony in proof of the liberality of Dr. Moffatt. Being informed that he mounted continuous gums on platina, Dr. Moffatt called on him and offered to teach him his method and give him the recipe for making the body, gum and enamel.

A paper was then read on

"S A L I V A."

BY R. J. HOFFNER, D. D. S.,

Demonstrator of Operative Chemistry in the Philadelphia Dental College.

The salivary glands, as they are denominated, are those organs which secrete the fluid peculiar to the mouth. They are three in number on

each side, named respectively, the parotid, submaxillary and sublingual glands. The former is the largest, and is situated below the lobe of the ear, extending upward into the posterior portion of the glenoid cavity, forward over the masseter muscle, and downward to the angle of the jaw. The duct through which it pours its secretion into the oral cavity, is that of Steno. It passes forward and downward across the masseter muscle, to its anterior border, where it turns inward, pierces the buccinator, and empties into the mouth opposite the superior second molar tooth. This duct is from an inch and a half to two inches in length.

The submaxillary, the next in size to the parotid, lies below the mylo-hyoid muscle, in a depression, just within the base of the inferior maxilla. The duct of Wharton, (about the same length as that of Steno,) which carries its secretion, passes first backward around the mylo-hyoid muscle, then forward to its termination at the side of the *frænum linguæ*.

The third and smallest of the salivary glands is the sublingual, which lies on the floor of the mouth underneath the tongue, and to one side of its *frænum*, extending backward to the submaxillary. It is easily perceived by the projection which it makes into the mouth just below and behind the inferior incisor teeth. Its communication with the oral cavity is by means of several ducts, known as the ducts of Rivini.

The supply of blood to these glands is obtained by means of the external carotid, which passes through the parotid; the facial, which extends into the submaxillary; and the sublingual, which gives some of its smaller branches to the gland of the same name. The nerves distributed to these glands are derived from the trifacial. The auriculo-temporal passes to the parotid; the lingual nerve supplies the sublingual, and filaments from the submaxillary ganglion pass to the submaxillary gland. These nerves are all branches of the inferior maxillary, which is itself derived from the trifacial.

There are, besides the salivary glands, a number of mucous glands scattered over the whole living membrane of the oral cavity, and the secretion from these organs passes into the mouth in common with that of the salivary glands. Most of the mucous glands are simple follicles, each opening directly into the mouth by its own duct; but the structure of the compound mucous and salivary glands is described by Kolliker as lobulated or racemose, resembling a bunch of grapes in the manner of their construction. Each separate lobule has its own duct, and a number of these pour their secretion into a single duct, which again passes on to be connected with the main trunk, to pour the accumulation of fluid thus collected, into the mouth.

The glandular vesicles are not always rounded in shape, but frequently present an elongated or pyriform appearance, due to the constant pressure to which they are subjected. The different shapes which these lobules take is so varied that Kolliker says, "it is impossible to describe at length the forms which they assume. The lobules of these glands are bound together by an investment of cellular or

areolar tissue which, in the parotid, holds them more closely in contact than in the submaxillary, and in the submaxillary more closely than in the sublingual. The structure of the lobules in both the latter-named glands is coarser than in the former. The ducts of the organs are composed of fibrous tissue, lined with columnar epithelium.

It is now a matter of importance to know the manner in which the secreted fluid can be obtained in its purest condition. To do this many devices have been resorted to. The fluid, as obtained directly from the mouth, is, of course, not fitted for examination, as the contents of both the mucous and salivary glands are collected together, mingled with the epithelial scales which have been detached from the lining membrane of the cavity. These broken epithelial scales can easily be detected, even with a microscope of low power, presenting an irregular appearance. The secretion from each gland can be got by placing a canula in the mouth of the duct from which the saliva is wanted, and then by irritating the fauces, the fluid will readily flow. Even in this case, however, it is liable to be contaminated with a little mucus and some of the epithelium which have found their way into the mouth of the duct. The best manner of obtaining the secretion pure, is by establishing a fistula, from which it can be taken before reaching the mouth. This means, of course, is not available in the human subject. When obtained in this way, the secretions from the parotid and sublingual glands were found to be clear and limpid, while that from the submaxillary was thick and viscid, "resembling," according to Piggot, "simple syrup, both in color and consistence." The mucus was obtained by tying the ducts of all the salivary glands, and then scraping the exuding secretion from the membranous surface. It is much thicker in its consistence than even the secretion from the submaxillary, and adheres so tenaciously to the sides of a glass vessel as not to admit of being poured.

Much discussion has ensued among physiologists as to the amount of secretion which takes place in a given time, say twenty-four hours. The range through which experimentalists have gone in placing their estimates upon such amounts, is indeed great if we compare the lowest and highest given quantities. In making these observations a difficulty arises, for the rapidity of secretion is affected, by so many causes that it renders the determination of the true amount secreted a matter of doubt. Thus, the mechanical action of the jaws will permit of an irritation sufficient to allow of a secretion of the fluid; the presence of food in the mouth has a decided tendency to increase it, and this tendency is different in different cases. If the food be hard and dry, the amount of saliva necessary to render it fit for deglutition is much greater than that demanded for food in which the fluid constituents are markedly present. Mental emotion exercises a peculiar effect upon the amount of secretion, acting differently where the emotion is itself different. Thus, for instance, if the emotion be that of pleasure, the secretion is full and rapid; but if it be the opposite, it will be lessened, if not entirely stopped. It was for this reason that the celebrated rice test, as it was termed of the Hindoos, was practiced when the detection of a criminal was attempted. If the guilty party had filled the

mouth with rice, the emotion of fear, incidental to crime, would be so great as to prevent a secretion of saliva, and the rice would be returned from the mouth as dry as it went in.

The affection of the mind in influencing a flow of saliva, is manifested in still another way; for even though food be not placed in the mouth, the simple thought of it is sufficient to produce quite an abundance of saliva. Then again, during sleep the glands remain in a passive condition, and at all times when at rest, the tendency to secretion must of necessity be allayed.

Removed as much as possible from all exciting causes, and when the experimenter has made the requisite provision for instituting his researches, he cannot isolate himself from his thoughts, which will, in all cases have a tendency to influence the secretion, and as his emotions may be varying, so will the secretion vary with every passing thought. With all these difficulties to contend with, it is easy to comprehend that the results are but approximations, much nearer in some than in other cases. According to Mitscherlich, the amount of secretion was about 20 oz. in the twenty-four hours. This was his deduction from the amount obtained by means of a fistula of the duct of Steno, which yielded $2\frac{1}{2}$ oz. in the twenty-four hours. He then ascertained that the amount of saliva secreted might be about six or seven times that secreted by the parotid. Carpenter estimates the quantity of secretion to be from 15 to 20 oz. Bidder and Schmidt, whose experiments in this direction are entitled to much credit, have given the amount secreted during twenty-four hours, deducting for the proper amount of sleep, as about 3 pounds. This they determined by actual and careful experiment upon the human subject, and found the yield for one hour to be a little over 3 oz. troy. Jacobowitsch, who has also given attention to the secretions of the mouth, discovered that though the amount of secretion may vary, the solid components held in solution remained almost invariable. According to the experiments of this physiologist, "the solids discharged by each pair of glands amounted to about 3.581 grs., of which 1.235 grs. was organic, and 2.346 grs. inorganic matter." Dalton gives it as his experience, that he has never been able to collect more than 556 grs., or a little less than $1\frac{1}{4}$ oz. troy in an hour.

From these conflicting statements it is easy to infer that some difficulty must arise in the pursuance of investigation, and the probability is, that though the experiments of the different observers may have been accurate, yet the extraneous influences in each individual case gave rise to a dissimilar result.

I have before stated that the secretions from the separate glands were in each of unlike consistency. This is due to the peculiar organic principle, known as ptyalin, which characterizes the salivary fluid. In the parotid and sublingual glands this organic matter is more thoroughly fluid than in the submaxillary; hence the viscosity of the latter secretion over that of the two other glands.

The chemical composition of the saliva has been tested by various analyses, and the results have coincided in almost every case. On an average, in one thousand parts of saliva, about 990 are water, and the

rest is made up of ptyalin, mucus, the salts, and extractive matter, which latter shows but a trace. Some of these analyses have been more complete than others, but in all there is a close similarity. In the saliva we have, as in other instances throughout the economy, a combination of chemical substances, many of which would not unite by ordinary chemical affinity. It becomes of interest, then, to determine by what means this combination is effected; but it would seem that natural laws have failed to make this matter clear, and physiologists have fallen back upon the assertion that it is due to vital influence; beyond this great life principle, which gives to the otherwise useless fabric of man its power to think and act, he cannot go; and until he reaches a similitude nearly allied to Deity, will it remain an enigma to man. When, however, an unexplainable phenomenon occurs in the human organism, the physiologist is apt to cloak his ignorance under the assertion that it is due to vital action; but ask him to explain this vital action, which is to make clear the great secret, and he is dumb. Dunglison, in his *Human Health*, says, after mentioning the various constituents of the saliva and urine: "All of which must have been obtained from without, and many of them combined within the body by ordinary chemical affinity, controlled, however, in all probability, by vital influence, but, in what manner, we know no more than we do of vital processes in general. When we assert that the operation is *vital*, we have expressed the limit of our knowledge, and the term is too often employed to protect our ignorance, when a better examination or understanding of the subject might have enabled us at times to present a more satisfactory explanation, founded upon physical laws.

The saliva, when mixed with mucus, just collected from the mouth, is a slightly viscid fluid, with a faint blue tint, having an alkaline reaction. It is somewhat frothy, and holds in suspension numerous white flocculi. After standing awhile a white deposit falls, and the fluid above becomes clear. Treated with alcohol, a white precipitate is thrown down, and if mixed with nitric acid or boiled, the albumen it contains is coagulated. It is by most physiologists regarded as devoid both of taste and smell, though some contend that both these properties are evident. Those who hold to the latter opinion, state that the saliva which one's self secretes, can, of course, to him have no taste, but that if the saliva of another be used, its sapidity will be manifest. But the other class, and among them are some of the most reliable authorities, seem to think that this could be only with saliva which had become a little stale, a matter materially altering the result in an organic compound liable to decomposition. As regards the smell, I have never been able to detect it, after many attempts, and in those cases where any odor has been perceptible, the probability is, that the fluid was in an abnormal condition.

Much discussion has arisen relative to the use of the saliva, and the very first experimental physiologists—those whose names have added lustre to the scientific world, and whose writings have been recognized as authority—have been at variance upon this subject. Some contend that the action of the saliva is purely mechanical; while others support

the opinion that, by its chemical properties, it acts as an aid to digestion. This difference of opinion is founded upon a discovery made by Leuchs, of Germany, that the saliva converted starchy substances into sugar. Among the most noted of those who hold to the mechanical influence of saliva, and in this he is supported by Beaumont, is the famous French Physiologist Claude Bernard. He found that the secretions from neither of the three glands, whether mixed or separate, would exert any influence upon amylaceous articles. From this he inferred that the chemical action of the buccal secretion resided wholly in the mucus. But the experiments of other observers proved that the mucus alone would not exert a chemical change. It requires to be united with the secretion from one of the other glands. Bidder and Schmidt found that, by mixing the parotid secretion with the mucus, starchy constituents were slowly acted upon; but if the submaxillary secretion and mucus were combined, no difference could be observed between the action which took place and that which occurred when common saliva was used, the rapidity of change in each case being very great. But, it might be asked, is not this change effected as well in the stomach by means of the gastric juice? The results of experiments have proved to the contrary. The stomachs of animals have been opened, and when due regard was taken to prevent the saliva from reaching them, starchy food placed within the stomach was unacted upon. But if saliva were placed in contact with it, the starch was immediately changed into sugar. Now the observations of physiologists have proven that starch, in its unchanged state, will not assimilate; and, therefore, if the action of saliva be to change starch into sugar, and if this starch must be changed to be assimilated, is it not fair to infer that the buccal secretion does, to some extent, aid digestion? But Claude Bernard has stated that this action of the saliva must be meagre, because the bolus of food will be in the mouth so short a time, that the saliva will act but imperfectly upon the whole mass. The experiments of physiologists have, however, determined that the action of the saliva is so rapid, that but a minute is required for the conversion of the starch; and this, they say, can be proved by keeping in the mouth a small quantity of starchy matter, and the sweet taste consequent upon the change will soon be noticeable. Granting, however, that the change took place more slowly, it is hardly to be supposed that it would be begun and finished in the mouth; for, with the bolus of food, there must be swallowed a quantity of saliva, and the influence of the secretion would be as efficacious in the stomach as in the mouth. This power of the saliva to aid digestion, is, of course, slight, as it has been stated that animals deprived of the glands have suffered no *material* inconvenience from irregularity of digestion, the amylaceous articles having been changed by the secretion of the pancreas.

The admixture of saliva with food in the mouth increases considerably the weight of the mass. This was determined by Bernard's experiments of opening the œsophagus of a horse, and removing the bolus, as it descended, when it was found to have increased eleven times in weight; the weight of the mass, before going into the mouth, having, of course, been determined.

That the saliva exerts a marked influence mechanically, cannot for a moment be doubted; and in this respect it might be well to consider the action of the fluids in this direction. The viscosity of the submaxillary secretion would well fit it for holding the particles of food together, and from its glutinous nature deglutition would be aided. Bernard is of the opinion that the submaxillary secretion is an important auxiliary in swallowing; and in this view Carpenter agrees with him, and asserts that, at the moment of swallowing, the submaxillary fluid is rapidly poured out. The parotid and sublingual glands secrete a fluid much more limpid than that of the submaxillary, and therefore, by intimate admixture with the food, furnishes a broader surface while mastication is being performed.

To prove the mechanical action of the saliva, Bidder and Schmidt tied the ducts of all three glands, and found mastication and deglutition much retarded, even when moist articles of food were taken. Bernard has also experimented in this direction. He gave to a horse a pound of oats, and having previously made an opening into the œsophagus, collected the bolus as it descended. This pound of oats was thoroughly chewed and swallowed in nine minutes, but on severing the parotid ducts on each side, both mastication and deglutition were impaired, so that the oats, which previously required but nine minutes' trituration, now required more than twenty-five minutes before they could be swallowed. Other observers have carried on these experiments, and, by tying the ducts of the different glands, have determined the length of time which it took in each case for certain articles of food to be thoroughly comminuted and swallowed; but these experiments only serve further to prove the mechanical part which the saliva plays.

In conclusion, I would state that in the foregoing I have drawn from many valuable works treating on the subject, and have, throughout the communication, endeavored to give full credit to the authors to whom I am indebted.

Dr. Ellis had assisted in a number of experiments performed upon dogs with gastric fistulæ, and the results were such as to confirm him as an adherent of the mechanical theory. He was aware that saliva possessed the property of converting starch into sugar, but the time required to effect that change is longer than food is generally retained in the mouth before deglutition; and any action of that kind which might have been inaugurated in the mouth, would be immediately arrested upon admixture with the gastric juice.

Dr. Flagg said that it could not be denied that starch was converted into sugar by maintenance for a time within the buccal cavity. This seemed to him, however, of but little moment, in comparison with the results of moistening the food and lubricating the passage through which it was necessary for the bolus to pass; that it was evidently insufficient to command much attention.

Dr. McQuillen regarded the subject as an interesting one. With respect to the chemical action of the saliva, there is a diversity of opinion. In former times the weight of authority was in favor of this theory;

but the investigations of Bernard are so minute and so exact, that scientific men at present, are to a great extent regarding it as mechanical in its action. He could recall with pleasure numerous occasions when a piece of bread placed in the mouth, and which at first was tasteless, gradually became sweet and agreeably palatable by being kept in the mouth and subjected to a continued trituration, and admixture with the salivary fluid, the grape sugar in this way being liberated through the agency of the ptyalin.

Dr. Tees regarded the saliva as exerting both a mechanical and chemical influence upon the food. Fluid substances are rendered more nutritious and more agreeable to the taste by being sucked in the manner that a child sucks the milk from its mother's breast. The action here is chemical as well as mechanical. He considered this to be the case with malt liquors also; the taste at first is not pleasant, but by being sucked, either from a bottle or from a glass, it becomes sweet and by no means unpleasant. This he regarded as due to the greater admixture of the fluid with the saliva, through the means which nature forces upon the child to obtain its supply of nutritive matter.

Dr. Hoffner said that the flow of saliva during the performance of dental operations, was, in some cases, a source of great annoyance. Many devices had been resorted to, such as placing napkins of different sizes in the mouth to absorb the fluid. He exhibited and described Arthur's saliva pump.

Dr. Flagg prepared for superabundant saliva cases, an unlimited supply of napkins, which he introduced consecutively, as fast as they became even tolerably moistened. At first the changes had to be made frequently, perhaps two or three per minute, but in five or ten minutes he could usually operate for quite a satisfactory length of time without the necessity of changing.

NOTICES OF BOOKS.

The "DENTAL CIRCULAR AND EXAMINER," is the title of a new Quarterly, edited by B. Wood, M. D., Dentist, of Albany, N. Y. Dr. Wood has had some experience in journalism, and no doubt will make the "*Circular and Examiner*" both interesting and instructive. The first number appears to be devoted almost wholly to Wood's Metal, but when certain things are taken into consideration, this may be excusable.

"THE PEOPLE'S DENTAL JOURNAL," for October, has reached us. The contents of this number are peculiarly interesting. Though this journal is designed for *the people*, it should not be overlooked by the dentist. Every dentist's reception-room table should be regularly supplied with it; to ensure this, one dollar should be sent in advance every year, to Dr.

W. W. Allport, Chicago, Ill. Back numbers, for circulation among patients, can be obtained at six dollars per hundred. We extract the following :

LIFE IN OFFICES AND COUNTING ROOMS.

BY E. ANDREWS, M. D.,

Professor of Surgery in Chicago Medical College.

A considerable number of men die, or are disabled every year in Chicago by the deleterious effects of office life. There is an evil here which the mercantile classes ought to be warned of, and induced to correct ; and the more earnestly do I desire to point it out, because the victims of it are generally the most industrious and thorough portion of our merchants and their office clerks. The evil complained of is two-fold, one part consisting of excessive and continuous mental labor, resulting in brain exhaustion, and the other, of inhaling foul, confined office air, resulting in blood poisoning, and consequent risk of death in a multitude of modes.

Brain exhaustion in its pure form, is more frequently seen in the proprietor or head manager of an establishment than in the office clerks. This results from the heavy personal interests he has at stake, causing him to become totally absorbed in his enterprise, and goading him on to such excessive, unremitting toil at the desk as ultimately breaks him down. The symptoms in these cases are so clear, that the physician can tell almost without inquiry that the brain has been overworked. The disease is commonly called nervous fever. The patient is mostly confined to his bed, is excessively restless and worn, sleeps badly, tongue not very foul, but the pulse is feeble and rapid. The most striking symptom, however, is a whining peevishness, a sort of childish, fretful, low spirits, "like a sick girl," as the poet has it, and which is altogether foreign to the man's usual manner, in fact, bordering on temporary insanity. Some of these patient's are past help from the outset, and some die, but the majority make a slow and tedious recovery.

It is worthy of notice that this disease, though produced by excessive mental effort, yet seldom attacks any except those who work in close offices. Men who are engaged out of doors, or in perfectly fresh air, seldom get it, however severely and continuously they may exercise their minds.

The second evil is blood poisoning from foul air. A merchant hires a store on South Water street, where it has the full benefit of the fragrance of Chicago river to begin with. Then it is twenty-five feet wide, and one hundred and fifty feet long. It has just two openings for ventilation, viz., the front door, opening on a crowded street, and the back door, opening on a narrow, offensive, dirty alley. It is fair to presume two things: 1st, that no perfectly pure air ever gets into the store at all ; 2d, that what does come in only gets a lazy, imperfect circulation among the boxes, bales and barrels. When I was in the army I saw several such stores taken for hospitals, with the invariable

result that the patients died by scores from the effects of foul air. It was found impossible to ventilate sufficiently such long apartments with openings only at the ends. In this confined air, therefore, the clerks, porters and customers, breathe and perspire all day long, adding new poison to air which was none too good in the beginning. But the worst is yet to be told. The proprietor of this enclosure of foul air does not deem the general atmosphere of the store even yet quite bad enough for his own personal use. He therefore cribs of a small counting-room, with glass partitions, in such a situation that it only gets air from the interior of the store. In this little room he locates himself, his partners, his book-keeper, his corresponding clerk, etc. If there are any remaining whiffs of air in the room fit to breathe, they are all used up by ten o'clock in the morning. These are the merchants who have nervous fever. These are the young, ambitious, hardworking clerks and book-keepers, who grow pale, who have dyspepsia, and cannot be cured by the doctor, who have typhoid fever, and are laid up six months, who fall into consumption, who have besides forty troubles, and cannot get cured.

Such men come to me, who actually work ten hours a day in a poisoned atmosphere, and then take their books home to work at them evenings. I say to such persons, "I shall not try to cure you now; you are going the sure road to death, and if I prop you up a little longer, to enable you to go on in the same course, it will only make the final result more sure and irremediable. The quicker your health breaks down, and obliges you to stop such a course of existence, the better chance you will have of a final recovery."

I know not what mechanical arrangements would be best adapted to ventilate our stores and offices but I have seen numerous establishments where the loss of time and efficiency by the proprietor and employees would every year almost pay for a fan blower, and a steam engine to propel it.

ANSWERS TO CORRESPONDENTS.

BY W. P. HAYWOOD.

A. W. K., of Ind.—You will get clear of your trouble by melting your gold in an equal quantity of saltpetre, borax, salt, and nitric acid. Place the crucible containing your metal and salts inside of another to guard against breakage. Just before pouring, add a little salt, this will give a richness to the gold unapproachable by any other process. If the gold should still prove refractory, dose the second time; this seldom fails to make it work almost as malleable as lead.

G. C. T., of Pa.—Soak your plaster well in water after applying the parting soap, and just before pouring on fresh plaster rinse off with a

soft brush. After the plaster sets soak again in water, when the parts will readily separate. It is not necessary that the parting fluid should be a jelly; it is quite as good if not better to be a thin fluid, with the carbonate of potash in excess.

P. J., of N. Y.—Wax, like some of the metals, is spoiled by over heating; the cause of the granulated and buncy appearance you complain of in the wax, is due to your pouring boiling water on it, or allowing it to heat so that it partly melts. The water should never be above 130°. Give it plenty of time to soften, not melt. By placing it in cold water, and allowing the heat to come up gradually until the whole is thoroughly melted, then cooled, you will get it back to its original condition. Keep your wax free from soap or alcohol.

ITEMS.

THE American Dental Association will hold its next annual session at Chicago, Ill., on the last Tuesday of July, 1865.

THE American Dental Convention will meet at White Sulphur Springs, Ohio, on the first Tuesday of August, 1865, at 10 o'clock, A. M.

THERE are certain Dental Journals which we have not lately received regularly. Whether from loss by mail, or because of the limited number printed, we cannot tell. Through the liberality of the publishers of the *QUARTERLY*, we are enabled to send our friends of other journals our issues in due season.

VARIETIES.

WHY are dentists melancholy? Because they look down in the mouth.

MORE pleasing than dew-drops that sparkle upon roses, are beautiful teeth between lips of crimson.

THE hardness of the enamel is not only observed to differ in different persons, but in the different teeth of the same person.

MORE or less nitrogen will be found in every organ, and in any part of any organ of the human body.

WHEN necessary to back teeth, difficult to remove from the plaster, equal parts of plaster and asbestos are used instead of plaster and sand, and allowed thoroughly to harden, they may be backed and riveted while in this investment.

GOLD may be purified from silver by quartation; that is, fusing it with three times its weight of silver, and then acting on the mass with nitric acid; the gold is left as a dark powder, and may be fused after being washed.

IF all truth must be published without regard to propriety, William Rufus, who drew a tooth per day from a rich Jew's head, to induce him to tell where his treasures were concealed, was a great moral philosopher.

GUM ARABIC is obtained from several species of the mimosa or acacia, from the bark of which it exudes; it is obtained in white or yellowish tears of a vitreous aspect. It dissolves in cold water, forming mucilage, from which it may be precipitated pure as *Arabine* by alcohol.

DURING the starvation of an animal, all its secretions are still formed; a consideration which proves that the production of urine, bile, and other such bodies is, in reality, connected with the destructive processes going on in the animal system. These processes of decay originate in the action of oxygen admitted by the process of respiration.

As cold articles taken into the stomach, are warmed by the circulation of the blood, and as muscular exercise increases the circulation in every part, it should always be used when any chill is felt at the stomach after taking anything cold.

YOUNG children are strongly affected by facial expression, and they learn the features of passion, long before they learn any other part of its language. Their imitative faculties are so active, and their sympathies so acute, that they unconsciously assume the expression of face which they are accustomed to see and feel.

ADVANTAGES OF CRYING.—A French physician is out in a long dissertation on the advantages of groaning and crying in general, and especially during surgical operations. He contends that groaning and crying are the two grand operations by which Nature allays anguish; that those patients who give way to their natural feelings, more speedily recover from accidents and operations, than those who suppose it unworthy a man to betray such symptoms of cowardice as either to groan or to cry. He tells of a man who reduced his pulse from one hundred and twenty-six to sixty, in the course of two hours, by giving full vent to his emotions. If people are at all unhappy about anything, let them go into their rooms and comfort themselves with a loud boho, and they will feel a hundred per cent. better afterwards. In accordance with the above, the crying of children should not be too greatly discouraged. If it is systematically repressed, the result may be St. Vitus' dance, epileptic fits, or some other disease of the nervous sys-

tem. What is natural is nearly always useful, and nothing can be more natural than the crying of children, when anything occurs to give them either physical or mental pain. Probably most persons have felt the effects of tears in relieving great sorrow. It is even curious how the feelings are allayed by their free indulgence in groans and sighs. Then let parents and friends show more indulgence to noisy bursts of grief, on the part of children as well as of older persons, and regard the eyes and the mouth as the safety-valve through which Nature discharges her surplus steam.

PLASTER PARTING.—Dr. A. T. Emery, of Boston, says he has been using a solution of wax and spirits of turpentine for a parting, and likes it better than anything he has ever tried. It has the property of leaving after several days exposure very readily. Caution should be used in having a very small quantity of wax in the solution, or it will leave too thick a deposit on the matrix, and the impression will be blurred. For a fine sharp impression, the *parting soap* is excellent.

An equal quantity of castor oil mixed with collodion, will prevent its blistering or peeling from plaster casts.

“Accustom early in your youth,
To lay embargo on your mouth ;
And let no rarities invite
To pall and glut your appetite ;
But check it always, and give o'er
With a desire of eating more ;
For where one dies by INANITION,
A thousand perish by REPLETION.”

A TRUE tale is told of Mr. Slipheimer, the famous Saxon dentist. He had a valuable tortoise-shell cat, that for days did nothing but moan. Guessing the cause, he looked into his mouth, and seeing a decayed tooth, he soon relieved it of its pain. The following day there were at least ten cats at his door ; the day after twenty ; and they went on increasing at such a rate that he was obliged to keep a bull dog to drive them away. But nothing would help him. A cat that had the toothache would come any number of miles to see him. It would come down the chimney even, and not leave the room till he had taken its tooth out. It grew to be such a nuisance at last, that he was never free from one of those feline patients. However, being one morning very nervous, &c., he accidentally broke the jaw of an old tabby. The news of this spread like wildfire. Not a single cat ever came to him afterwards. This is related as true. Do you doubt it ? Of course not.

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THE GUMS AND THE LANCET.

The gums are composed of a thick mucous membrane, having a cartilaginous appearance internally, in which they differ from the mucous membrane of the stomach ; externally, the texture is the same. There is no coloring matter in the gums, the blood of the skin giving them a red appearance ; the brightness or paleness of the red, indicating, in many instances, the health of the person. Those who possess a good constitution have them of a light color, firmly adhering to the periosteum, and closely attached to the necks of the teeth ; they are but slightly sensitive on pressure of the finger nail, and bleed but little when lanced. When about to extract teeth for such patients it is always advisable to use the lancet, unless they are of a hemorrhagic diathesis ; in that case, lancing should be avoided if possible, but if there should be much danger of laceration, lancing is the evil to be preferred. There are, however, comparatively but few persons of a hemorrhagic diathesis, as is evidenced by the small number of cases of persistent bleeding met with by dentists individually. One may go through a life-long practice without meeting with such unfortunate patients. The patient generally knows whether he is thus predisposed, and before submitting to the operation of extraction, should acquaint the dentist with the fact, that constitutional treatment may be resorted to. To increase the amount of fibrine in the blood, both before and after the operation, five drops of the muriated tincture of iron may be given in a tablespoonful of water, to be taken through a straw, three times a day ; the mouth should be rinsed afterwards with an alkaline wash.

Not many years since a certain dentist professed to have discovered the existence of a ligament between the gum and tooth, by severing

which he proclaimed himself able to extract teeth without pain. He created a sensation for awhile; loose roots, no doubt, he removed, as all expert operators do, with scarcely any pain, but firmly set molars and badly decayed bicuspid soon made short work of his renown.

Many patients have a great abhorrence to the operation of lancing. This is undoubtedly engendered by having it performed in a clumsy, unskilful manner, and with unsuitable instruments. Patients frequently exclaim, "Why, that didn't hurt; I was afraid it was going to hurt me dreadfully." The lancet used for the purpose should be very thin and narrow bladed, so that the attachment between the gum and tooth may be broken up without lacerating the membrane. With such an instrument, the operation may be effected down to the junction of the process and the neck of the tooth; and in difficult cases, a flap may be quickly and delicately cut and laid over to allow the beak of the forceps to pass up or down and firmly grasp the fang, or to cut through the process. Many lancets sold for the purpose are entirely too thick and wide, and when used make ugly wounds and give unnecessary pain.

Loose fangs, connected but slightly with the gums may be taken out without the aid of the lancet by using the ordinary sharp pointed fang forceps. When the attachment, however, between the gum and tooth is very strong, unless the precaution is taken to lance, the gum is very apt to be lacerated. The lancet should be held firmly, and the separation effected slowly and carefully. If the lancet should slip, there would be danger of cutting the cheek, perhaps severing an artery, and dangerous hemorrhage the result. A few years since, an accident of this kind happened in this city, and the person came very near losing her life. The young lady had a tooth extracted by her dentist in the afternoon. Late in the evening, the hemorrhage being persistent, and the patient growing weak from the effects of it, physicians were sent for, but for various reasons none could attend immediately, it being morning before medical assistance was obtained. In the meanwhile, the mother of the young lady called for a light to examine the mouth. To her surprise she saw no blood coming from the socket of the tooth extracted, but on making further examination, a gash on the cheek was disclosed, from which the blood flowed freely. She placed her finger on the spot and kept it there the long night, and until a physician came. The patient had fainted from the excitement and loss of blood. Local means were used for the arrest of the hemorrhage, and the parts eventually healed. The dentist who performed this operation, either regarded the wound as trifling, or else was unaware that he had inflicted it.

Scarifying the gums of children for the purpose of aiding nature in the eruption of the deciduous teeth, has been and is still regarded by many as a very delicate and dangerous operation. The difficulty of arresting hemorrhage in the mouths of infants, should it be persistent, is no doubt one cause of the dread of lancing; but the relief afforded the child, by the discharge of the increased amount of blood in the parts, and the removal of the pressure of the tooth against the gum, is of much more consequence than any danger that might arise from profuse hemorrhage. The most apprehension is felt on lancing the gums over the superior incisors. If this is done by inexperienced or careless operators, the important artery in close proximity may be severed. The operation, however, is void of danger when properly performed. Much uneasiness is often felt at the profuse flow of blood; but as this soon stops and the little sufferer is relieved, a happier feeling is the result. Dr. Robertson, in his work on "Extracting Teeth," gives an instance of a skilful surgeon causing the death of a child by lancing the gums over these teeth. The hemorrhage in this instance must have been caused by accidentally severing the artery; perhaps by lancing across the whole space to be occupied by both teeth. The incision should be made on each side of the frænum, directly over each tooth. If lanced when the teeth are almost erupted, there should be no fear of danger.

A. T.

AMALGAM.

BY A. T. JOHNSON.

For several years I have read with interest the discussions which have taken place at the conventions of Dental Associations, and elsewhere. Among the various subjects discussed, the use of amalgam or other material than gold for the filling of teeth, has at times occupied a prominent place; finding many able objectors to its use, as well as strenuous advocates in its favor, under certain circumstances and conditions of the teeth. Many object to its use in toto, saying that any tooth that can be, or is worth preserving, should be filled with gold, to the exclusion of every other material.

While I deprecate the use of anything but gold for filling front teeth, I would ask, what shall we do with unnumbered molars and bicuspsids of a very large class of individuals, whose means will not permit them to pay the price of a gold plug, particularly when the cavities are of large size and the charge per plug could not be less than \$5, and up-

wards, even at the old quotation of gold? Shall we turn them away in their inability to pay the price demanded for gold, telling them that it is the only safe and reliable preservation of carious teeth, especially, when in every community, thousands of instances can be cited, of teeth that have been filled fifteen or twenty years with other material than gold, and are still in a good state of preservation; which, to say the least, is a tolerable argument in its favor.

Notwithstanding all that has been said against the use of amalgam, about its producing salivation, etc., it is extensively used by probably a large majority of the profession, a portion of whom at least occupy a high rank as practitioners.

The question then arises, which of the various compositions that have been offered to the profession for the purpose designed, is the best.

Having been in practice between nineteen and twenty years, and during that period, having made thorough trial of many preparations, I have never as yet, found anything that compared favorably with the amalgam prepared by Dr. A. Lawrence of this city. (Lowell.) Having used it for several years, I find it uniform in its results, neither expanding or contracting, producing no discoloration of the teeth, (if properly used,) and in many cases, no change of color on the surface of the filling.

Having used this amalgam for several years, (as before said,) with the happiest results, and having adopted a method of using it, particularly in the finishing of the filling, that in some respects, possibly may be original, and thinking perhaps that a description of my manner of so doing, might not be unacceptable to those of the profession who use or may use this amalgam, I will state such method in as brief and explicit language as possible.

After the cavity or cavities to be filled are excavated, I put a sufficient quantity of amalgam in a small mortar, add quicksilver, triturate well with pestel, then fill the mortar partially full of alcohol, and then rub the paste with the pestle thoroughly. If the alcohol is discolored by so doing, turn it off and put in more, and so on until no discoloration is apparent. Then put the paste in a bit of linen or cotton cloth, press out the superfluous quicksilver, *rub dry*, and it is ready for use. In filling crown cavities, I pack them more than full, wait a short time for it to harden; in the meantime turning a few drops of a preparation called "Sozodont," (which acts as a lubricator,) into a tumbler of soft water, shaking the same; I then take a small pellet of fine cotton in tweezers, wet the same in contents of tumbler, touch it to powdered

pumice stone, and pass it lightly back and forth across the filling. I do this at intervals, using more strength as it hardens, several times, sometimes with pumice and sometimes without, and the result is a beautiful filling, flush with and about as smooth as the enamel, for which a burnisher is a needless instrument. For approximal and buccal cavities, I use for packing the filling an instrument similar in shape to the flat surface of a burnisher, but much thinner, the end and edges being sharp enough to shave off the surplus material. I then wet the end of a thin wedge-shaped stick, touch it to pumice, and pass it gently between the teeth; after which I take a thin wisp of cotton, twisted slightly, or a bit of narrow tape, wet the same, add pumice, and pass it over the surface of the filling. I do this at intervals, as before mentioned, and the final result is a filling alike satisfactory to operator and patient. It requires more time than the usual manner of finishing such fillings with a burnisher, but in my estimation it is well spent, most certainly, as far as the patient is concerned, as well as satisfactory to the operator, in the pleasing results of his manipulations.

Trusting that I may have uttered no treason against the art preservative of the masticating organs, in the above communication, I offer it for the consideration of your readers, if you should deem it worthy a place in the pages of your journal, hoping that a perusal of the same may at least be productive of no harm.

LOWELL, March, 1865.

ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A meeting of the Society was held January 3, 1865, Dr. Kingsbury in the chair. The following communication was read upon

"NON-SECTIONAL BLOCK WORK."

BY DR. JOHN W. MOFFITT, OF HARRISBURG, PA.

In glancing over the past, none can help remarking the multiplicity of forms that, from time to time have been adopted, and had their day in mechanical dentistry, in that branch pertaining to the manufacture and mounting of artificial teeth. True, at the very outstart single teeth with gold and silver, as a base, were adopted without much hesitation or argument, simply because incorruptibility and strength were patent in their very natures. Upon this account, they have kept pace and company with the profession, in all its advances and vicissitudes, to the present. While at first we were convinced that they were good, and satisfied with them as a reliable base, there were other great ends to be attained which it was impossible to combine upon gold and silver with single

teeth. These objects were adaptability, cleanliness, symmetry, and comeliness. Last, though not least, to secure the requisite strength with these desiderata. Now, while the majority feel well convinced that no base for artificial dentures can supersede the use of platina and gold, yet almost daily some new-fangled theories are foisted upon the profession, and as promptly, liberally, and faithfully tried as they are presented. The failures, at the practitioner's expense, have been frequent enough to convince the most skeptical observer or ambitious theorizer that platina and gold have not been and are not likely to be dethroned. But the object of this paper is to call your attention to a style of artificial dentures mounted on a platina base, known as "Non-sectional Block-work," in which I claim to have combined the desirable requisites before alluded to. The nature of this work consists in the manufacture of teeth and gums, in one solid and homogeneous mass, upon a platina plate which has been fitted to the mouth of the subject, of the materials which I shall hereinafter specify. The formulas I am now using will be found to differ somewhat from those I had patented in 1860. To be brief, I will first proceed to give a list of materials used; second, the proportions of these required for body, enamel, etc.; third, the manner of manipulating them to produce the final result, "non-sectional block-work."

First. The materials used are spar, silex, Bohemian glass, white French china, and, for coloring matter, titanium, platina sponge, and purple of Cassius.

Second. I take for *No. 1 Body*, spar, 12 ozs.; silex, 4 ozs. 6 dwts.; Bohemian glass, 45 grs.; French china, 30 grs.; titanium, 36 to 56 grs., as the color desired may render proper.

For *Body No. 2*, use body No. 1 fused and ground to an impalpable powder.

For *Blue Enamel No. 1*, spar, 4 ozs.; Bohemian glass, 2 dwt.; platina sponge, from 1 to 5 grs.; gold mixture, 5 to 10 grs.

For *Blue Enamel No. 2*, take of No. 1 enamel 1 oz.; add 9 grs. Bohemian glass, and *grind very fine*.

Yellow Enamel made same as No. 1 blue, omitting the platina sponge and substituting titanium, 40 grs.; gold mixture, 20 grs.

Gum Enamel is made from a frit, composed of a purple of Cassius, 8 grs.; Bohemian glass, 11 dwts. 11 grs.; spar, 20 dwts. This is ground to impalpable fineness and packed into a crucible lined with a batter of silex. Lute a piece of fire-clay slab into the top. After it is dry, place it into the muffle of a furnace heated sufficient to fuse spar, for the space of fifteen or twenty minutes, after which grind fine and add $2\frac{1}{2}$ dwts. spar, and $2\frac{1}{2}$ dwts. Bohemian glass. Grind the whole very fine, and fuse to vitrification in an open crucible in the muffle of a furnace. This will produce the frit ready for making gum enamel; for making which take of frit say 1 dwt., Bohemian glass, 2 dwts., or in proportions to produce the proper shade of gum color.

Thirdly. After the plate is properly fitted, the articulation obtained, and matrix provided and applied to the plate, as for ordinary block-work, take a sufficient quantity of Body No. 1, mix it to a thick paste, and, after oiling the matrix, pack it into the latter, tapping it with the finger to drive out any confined air. After the body is *packed in solid*,

proceed to carve the teeth. After the exterior portion of the teeth and gums are carved, remove the matrix, carve the crowns and lingual parts, and, before covering the palatal portion with body, enamel the teeth, by first mixing the enamels to consistency of cream with *soft water*, and laying on the yellow first at the neck of the tooth with a camel's hair pencil. Then the No. 1 blue is applied so as to overlap the yellow, and reach down over the cutting edge of the teeth. (This coming down of the enamel over the cutting edge will make sufficient allowance for shrinkage in length.) After the enameling is completed, and the teeth trimmed to the desired shape, proceed to cover the palatal portion of the plate with body No. 1, and carve, imitating nature as closely as possible.

The carving and enameling completed, the piece is ready for the baking process, which is accomplished by imbedding it in silex sand, in a slide or tray, the edges or rim of which should be from one-half to an inch in height, and allowing the sand to fill the palatal portion and cover all parts of the body, except the teeth or the parts enameled. It should then be introduced slowly into the muffle of a heated furnace. After it has come to the point of fusion, which requires from ten to fifteen minutes, it should be withdrawn and allowed to cool. Should there be found any imperfections in the piece, they must be remedied by applying No. 2 body to those which may be found in the body, and No. 2 enamel to those which may be found in the teeth; and then bake in the furnace as before. After the piece has again cooled it will be found perfect, and ready for the gum enamel, which is applied with a camel's hair pencil, in the usual manner; after which the piece is placed upon the slide, and introduced very slowly into the muffle of a furnace, allowing the heat to come upon it gradually, until the enamel flows, when it is withdrawn, placed in a muffle previously warmed, and allowed to cool; it will then be found that it has undergone scarcely any appreciable change in either length of teeth or form of the curve, and will be entirely free from the liability of cracking, shelling, or breaking from exposure to sudden changes of temperature, as taking it from the mouth while warm and placing it in cold water, or from extremes of heat and cold while in the mouth.

I have thus, gentlemen, endeavored to give you a description of the manner of producing this work, and hope those of you who may feel inclined to give it a trial may find it as valuable to yourselves, and as satisfactory to your patients, as I have.

Dr. Tees regarded this as very beautiful work; the only objection presenting itself to his mind being the difficulty a new beginner would experience in carving the teeth. Although making neater work, yet the manipulation as far as the teeth and gums are concerned being the same as block work. In mounting continuous gum work the teeth could be procured of the manufacturer of the requisite size, shape and color.

Dr. Moffitt remarked that as far as that difficulty was concerned, any one with an ordinary amount of skill in this direction, could in a very short time be enabled to carve with ease.

Mesmerism was then taken up. Dr. McQuillen opened the subject, and during his remarks read interesting extracts from the works of Dunglison, Mitchell and other eminent men; referred to the close relation which the phenomena of mesmerism bears to the arts practised by the priests in the ancient temples of Egypt, Greece and Rome. He thought that the proper direction to look for the solution of this intricate question was the recent and philosophical recognition of the correlation, conservation or unity of forces; in which heat, light, electricity, magnetism, &c., are no longer regarded as subtle fluids with peculiar properties, but simply as forms of energy, which, with protean facility, are capable of mutual conversion. Vital force is but another form of this great unity of forces, and while it is perfectly absurd to talk of magnetic or electric fluid passing from one person to another, the possibility of a person possessing a large amount of vital force or energy infusing a portion of his superabundant capital into those with whom he comes in contact, and who have but a limited share, is not only reasonable, but is daily manifested in the ordinary commerce of life. The hysteroid or cataleptic state into which persons are thrown under such circumstances, is by no means an unusual condition for some individuals to lapse into and remain for a considerable period without an assignable cause, other than attributing to irregularity of nervous action.

The subject was commented on by several of the students of the Philadelphia Dental College who were present, among them Mr. Rogers, who had extracted twenty-nine teeth for a lady when in the mesmeric state, without her giving evidence of the least amount of pain. She was mesmerized by a travelling magnetizer.

Dr. Kingsbury said that the question to be asked was, Can mesmerism be of any practical benefit? If it can, then it would be well to devote our attention to it. He did not regard these mesmeric influences any more mysterious than the operations of the organism. He did not give credit to this subject, until those with whom he was acquainted and in whose veracity he had confidence, were subjected to its influence, and assured him that they were unable to control their actions. A young man, a friend of his, was mesmerized. He placed his hand upon a glass show case, but was unable to raise it again, beside exhibiting the usual phenomena of a person in that state. He determined to sift the matter and make experiments himself, and was enabled, to his own surprise, to put a person in this state. He experimented upon this young man, and when in this state had him under his complete control, so that even after he had recovered, and was about leaving the room, with his back to him and without uttering a word, by the power of his will, could prevent him advancing another step. Being called upon at one time to extract a tooth for a young lady, he did so, with a subsequent supervision of an unpleasant flow of blood into the throat producing asphyxia. Shortly afterward, the brother of the young lady, a physician, called upon him to remove another tooth for her, and requested him to mesmerize her. In about thirty minutes she was in that state, when he extracted the tooth with complete success. Several distinguished men of New Jersey, among whom was the late Judge Wm. L. Dayton, recent Minister to France, wishing to investigate this subject, not merely out

of curiosity, but in a scientific point of view, they requested him to mesmerize the young lady in their presence. He consulted the young lady, and gaining her approval, a time was appointed to meet at her residence. Previous to leaving Dr. Kingsbury's office, Judge Dayton had disarranged some of the articles of furniture, placing one chair upon another, and the poker upon the mantel-piece, &c. They left orders for the room to be closed and nothing disturbed. When the young lady was magnetized she was put in communication with Judge Dayton. The Judge desired her to visit mentally the room they had previously left, which she did, describing minutely everything she saw, and immediately exclaimed, "A pretty state of things—one chair upon another, and the poker upon the mantel-piece." He also induced the clairvoyant condition in the young man mentioned above, who could read a book blindfolded, and tell the time by a watch. Too much publicity having been given to the matter to suit Dr. K.'s modesty, and not relishing the notoriety of being a mesmerizer, he determined to have nothing further to do with it. This was fifteen years ago. If mesmerism could be made useful in dentistry, he was willing to lend his experience to aid investigation.

THE TRUE POSITION OF THE DENTIST, IN RELATION TO HIS PATIENT, HIS STUDENT, AND HIS PROFESSION.

From the Proceedings of the "Mississippi Valley Association," published in the "Dental Register of the West."

Dr. Keeley.—I think we do not advise our patients enough in reference to taking care of the teeth; we should try, I think, on all occasions to impress them with the importance of keeping their teeth in proper condition. Sometimes by simply taking one tooth out we can regulate a whole set of teeth. A great many dentists will take a wrong tooth out just from the fact that they have not studied their case. How often is it the case, that just by a little advice, which may not take us over five minutes to give, we can do our patients immense good. Who of us, on seeing some of the teeth standing very irregular, do not regret that we had not seen the case sooner, so that we might have extracted a tooth. We can oftentimes make appliances if we advise at the right time. I never feel better satisfied with myself than after giving two minutes advice to a young patient, when I know they will follow it, and afterward thank me for it.

Dr. Shadoan.—I was not in during a part of the discussion on irregularities of the teeth, and would like to ask the Association in regard to the case of a young lady sixteen years of age. The temporary tooth is still in the mouth, and the permanent one is coming out; the temporary tooth is quite as large as the corresponding permanent one on the opposite side. I should like to know whether it would be better to take out the permanent tooth and let the temporary one remain, or not.

Dr. Berry.—If you took out the permanent tooth the temporary one would last ten or fifteen years, when it would come out. It is not unusual for a temporary cuspidati to remain till the person is from twenty-five to thirty-five years of age.

Dr. Shadoan.—I told the young lady it was a peculiar case, and I could not be prepared to decide upon it till I came back. I have a sister-in-law thirty-five years of age, who has a temporary tooth still, and the permanent tooth has not yet made its appearance.

Dr. Taylor.—One word on what our duty is to the patient and student. I regard our duty to the patient to be such that it not only requires us to give him the best of our skill in manipulating, but it is also our duty, as Dr. Keely remarked, to give him the very best advice we can. It is to our interest to preserve all the teeth we can for his use, and to prevent decay; it is not only our interest to do so, but our *duty*, and whenever we can give any such advice we should do it.

A few words in relation to students. I think the time has come when we should give them that advice which will be for their good. Take no student unless you know he will pursue a proper course, such as will make him a good dentist; take no student whose preparatory course you think has been insufficient. It has been a great drawback in our profession, this taking students whose preparatory course has been inadequate. There are some dentists that take students who cannot speak their own language intelligibly, or write a sentence correctly. These unprepared students cannot take hold of a study with that clearness which one that has been prepared can do. Besides all this we have a literature in our profession, to sustain. We all feel this, especially those of us who have been in the profession for twenty or thirty years, watching its progress. Twenty years ago we could never have got so many members of our profession in one body, as there are here to-day, and discuss such subjects as we have done—such as the pathological conditions of the teeth; we can now talk with the physicians on such subjects. Let us see to it that all our students have the requisite requirements.

Dr. Taft.—This is a very important subject, and one, so far as the future is concerned, has no equal. It is a very easy matter for us, who are here, to say that we will only have one class of students, and no other; it is an easy matter for us to say that we will take no students for less than two or three years; it is not a difficult matter to say that we will not take a student unless he is prepared, as far as literary and scientific acquirements are concerned; it is very easy to say all that, but there is a difficulty that I hardly see how we can reach and overcome, viz.: there are so many in the profession throughout the country, who do not and will not attend the meetings of our associations, who do not take the journals, and whom you do not reach at all. You will find them all over the country—in this city, in Louisville, and in every other city; they receive students for two months, perhaps, or for any length of time, so long as they get a fee, and send them out with a certificate, or recommendation of qualification for practice. How are we to remedy this? Our Louisville friends have mentioned that there

are such men in their city, and we know there are some of this class in this city. Such students swarm over the country and bring the profession into disrepute. In many cases they bring down the scorn and the hate of the people upon them, and it takes, in many instances, a long time to regenerate such communities. They are, to be sure, merely "quacks," and the people who employ them often have little or no regard for them.

We see some strange things in regard to this class of men. I have a letter, which was handed to me recently, which came from a man who is practicing in Illinois, he is doing a flourishing business on the quack principle. He evidently does not know the first principles of the profession. (For the letter, see the February number of the *Register*.)

That is only a specimen of the literature of this class of dentists. How would you like to present such a man as a "professional brother" to any scientific man or body of men?

This presents a lamentable feature in our profession, and if any method can be devised to remedy it, I shall be greatly rejoiced. The number of this class of dentists is, however, relatively, if not absolutely diminishing.

What inducement is there for a student to pursue the best course, and make himself thoroughly competent in every department of dentistry? Much every way; it redounds to his credit, it brings him honor, it brings him reputation, it brings him money, it brings him everything that is desirable; whereas, if he starts out in his professional course half prepared, he receives none of these benefits.

These things ought to be presented in a tangible shape to the members of the profession whom we can in any way reach. Who are the men that are the mere dependants upon the profession, who present but a beggarly aspect in any sense? They are the men without attainments. This class of men do not recognize the responsibility that rests on them; if you converse with them you will perceive them at once. What can be done to remedy this state of things? Oh, that there could be a concurrent and systematic effort by the whole profession, bearing upon this subject.

Dr. Berry.—I want to say a word on this point here. This is a pretty difficult thing to remedy. I apprehend it requires a good deal of time and considerable effort on the part of our profession. I think the quacks get along quite as well in the city as any where else; but they may be found in all parts of the country. I suppose the only possible mode of remedying the evil is to educate the people. I do not like the distribution of pamphlets, the main drift of which is to convince the dear people that their authors are the only dentists in their region proper to be entrusted with the care of the teeth.

I suppose the best method is to circulate tracts similar to the second edition of the *Dental Luminary*, published by the Cincinnati Dental Association, containing the simple truths respecting the management of the teeth which every one ought to know.

Dr. Watt.—I think that we are too sensitive on some things, and not

sensitive enough on others. It is very evident that the better class of dentists, and the more sensitive class, have been too cautious about enlightening the public; they were afraid it would verge on quackery; some of them got so far as to think it against etiquette to have a sign out, expecting they would be well known enough without one. That is all folly. It is the very highest style of egotism; it says, "these other dentists have not earned a reputation as I have; people know me without my having a sign." Imagine a lady walking up and down the street, inquiring of a boot black, a street sweeper, or a soap fat man where you live! Our duty is not only to make our office comfortable and pleasant, but see that it can be easily found.

We have been far too dilatory in educating the public; this remark applies as well to country as city dentists. I do not agree with Dr. Taft that quacks succeed better in the country. It is a remarkable fact, Mr. President, that four persons from the place of my nativity, without any preliminary study, without any extraordinary genius for the practice of our profession—that four such persons should be, under those circumstances practicing in this city, and yet they are; but it is necessary for such persons to go away from home. I suppose if a man learns his quackery in the city, he will succeed best in practicing in a country town; and if he comes from a country town he succeeds best in the city.

Dr. H. A. Smith.—Reference was made to the subject of dental signs. This matter seems to be regulated somewhat by custom and locality, and whether a sign should be eight by ten in *feet* or *inches*, I do not pretend to decide. Though I think the dentist who chose these proportions in feet, exhibits decidedly bad taste.

The custom of adorning dental signs with the title of M. D., I think, should be deprecated. If the dental profession is to take the high rank among the professions that we think it justly deserves, it certainly must be effected through its own merits. Those of the profession who have had the degree of Doctor of Dental Surgery conferred upon them, can hardly be excused for doing that which cannot but bring the science of dentistry into disrepute. It may be that these M. D. dentists are a superior order of practitioners. If so, I must confess that I had failed to discover it, and believe the "generous public" have been equally slow in making the discovery. There is a strange inconsistency in the man who could talk so eloquently in our society meetings of the great value and importance of dental education, and at the same time have upon his door plate "John Smith, M. D., Dentist." Some even, who are educators, and who each year are responsible for having conferred the degree of D. D. S. upon one or more unsuspecting young man who desired to enter the dental profession, are in this public manner repudiating that which those graduates are led to believe is a guaranty of the confidence of the public. I would not be understood as undervaluing the importance of medical in connection with dental education. I am induced to refer to this subject by an earnest desire that we should as a profession receive the respect certainly due us from an intelligent public, but which I fear is now partially withheld, and for the reason

chiefly that we do not quite enough respect ourselves, in a professional sense.

Dr. Berry.—I do not think it strange, Mr. President, that students are often neglected by their preceptors; they are usually troublesome to manage when put at hard study, as they should be, and the fee commonly trifling as compensation for instruction in the principles and practice of dental surgery. I do not think there is a dentist in good practice, who can afford properly to instruct a student for less than one thousand dollars, and then he would be poorly remunerated, if faithful in discharging his duties to his pupil.

Dr. Taylor.—One of the duties of the profession is to see that we have a class of educated dentists. This is a duty that every one of the gentlemen present to-day owe to themselves and the profession. Some of you are in duty bound to take students; you should do it, and you cannot discharge your duty to the profession unless you do so. Suppose we would all say we would not take students, what would be the result? Suppose we should leave all these young men to be taken care of by our Dental Colleges? In a little tour which I made some time ago I met twenty students, and not one of them had been in any institution. If all our dentists would send us students we would have fifty in this college every year. There are men present who have been in the profession ten or twelve years, who have never sent a student to any college. I will talk plain, because I think it is my duty—a duty which I owe to my profession and myself.

A large majority of us have not done our duty as we should. It is our duty to send students to our institutions, so that they may be prepared to discharge the duties that devolve upon them as dentists.

A word in relation to this preliminary education which Dr. Smith spoke about. The idea of sending students to college, is to let them have this preliminary education. If you took a student to-morrow, and it was the last day of October, you should send him to the College three months, where he would get in the traces, while otherwise, it might take three years.

Dr. Berry.—In order to remove this evil of incompetency in the dental profession, we should be sure that our students understand everything as they go along, and require them to attend two courses of lectures at a dental college.

Dr. McCollum.—I feel that Dr. Taylor's remarks had some reference to me. I have not sent a student to the college for a number of years. I have had several students whom I have recommended to attend dental colleges, as they could obtain a better knowledge of dentistry there than elsewhere.

Dr. Watt.—I feel that Dr. Taylor's remark hit me pretty hard, and I will make a little apology. Some of my students have been graduates of this institution, but my latest student was voted out (Dr. Taylor voting against his admission) and so I do not feel like bringing any more. [Laughter.]

The discussion here closed. The President said:

GENTLEMEN OF THE ASSOCIATION: We have met and had a very pleasant meeting. It has been, probably, of benefit to us all. Some who are here have not taken a very active part in the discussions. May we not ask them that at the next meeting they will do so. May we not, each one of us, during the three hundred and sixty-five days which will intervene between this and the next meeting, find something in our practice to present to the Association. The Bible says, "Freely ye have received, freely give." Let that be our motto for the future year, and let us see if we cannot have, in the meeting of another year, far more interest than was manifested in this.

The President then announced that the Twenty-first Annual Meeting of the Mississippi Valley Dental Association was adjourned till the second Wednesday in February, 1866, at ten o'clock, A. M.

COMMENCEMENT OF THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The annual commencement of the Pennsylvania College of Dental Surgery was held at the Musical Fund Hall, Phila., February 25, 1865.

The valedictory was delivered by E. Wildman, M. D., D. D. S., Professor of Mechanical Dentistry.

The number of matriculants for the session was fifty-seven.

The degree of D. D. S. was conferred on the following gentlemen, by Henry C. Carey, Esq.:—

NAME.	RESIDENCE.	TITLE OF THESIS.
GASPER A. BETANCOURT,	Cuba,	Filling Pulp Cavities and Roots of Teeth.
SAMUEL A. BEECHER,	Missouri,	Sulphuric Ether.
HOWARD BASSETT,	New Jersey,	Diseases Incident to First Dentition.
BENJ. J. BING,	Maryland,	Dentistry, a Science.
J. WESLEY CLEMONS,	Pennsylvania,	Predisposing Causes to Dental Caries.
AUGUST CULMAN, M. D.,	Bavaria,	Neuralgia of the Trigemini.
EDWIN T. DARBY,	New York,	Dentistry, a Profession.
HORACE ENOS,	Pennsylvania,	Vulcanized Rubber.
SIMON FRAU,	Cuba,	Ether.
MICHELE FICHERA,	Sicily,	Filling Teeth.
J. N. FARRAR,	Massachusetts,	Intermittent and Hysterical Neuralgia.
SIMON GUILFORD,	Pennsylvania,	Vascularity of Dentine.
JAMES O. A. JOHNSON,	New Jersey,	Extraction of Teeth.
JOHN LYMAN, M. D.,	Ireland,	Military Dentistry,
C. A. MILBANK,	New York,	Diseases attending First Dentition.
CHAS. B. McGRATH,	Pennsylvania,	Hysteria.
WM. A. NEWLAND,	Pennsylvania,	Fractures of the Teeth.
ABRAM PRATT,	Pennsylvania,	Odontology.
S. G. PERRY,	New York,	Inflammation.
P. PRETERRE, M. D.,	New York,	Development of Teeth.
JARED A. PERKINS,	Massachusetts,	Cause of Dental Caries,
THOS. ROBINSON,	Delaware,	Irregularities of the Permanent Teeth.
THOS. ROBSON, JR.,	Pennsylvania,	Rubber.
HEWLETT C. ROCKWELL,	New York,	Nitrous Oxide.
A. EMORY STREET,	New Jersey,	Entire Artificial Dentures.
W. H. SCHOLL,	Pennsylvania,	Indurated Rubber.
GEORGE B. SANFORD,	New York,	Teeth and their Diseases.
J. B. R. WRIGGINS,	New Jersey,	Caries of the Teeth.
J. A. WOODWARD,	Pennsylvania,	Treatment of Exposed Dental Pulp.

The following are the reports of the Demonstrators:—

OPERATIVE DEPARTMENT.

Number of Patients visiting the Clinic	2600
Number for whom the following operations were performed	1487
Gold Fillings,	627
Tin "	696
Wood's Metal,	9
Hill's Stopping	14
Amalgam	12
Treatment and Filling Pulp Cavities	176
Superficial Caries removed	6
Removal of Salivary Calculi	57
Treatment of Periostitis	28
" Alveolar Abscess	10
" Inflammation of the Gums	5
" Partial Necrosis	15
" Irregularities,	10
Pivot Teeth inserted	2
Extraction of Teeth and Roots	2010
Total,	3677

JAMES TRUEMAN, *Demonstrator.*

MECHANICAL DEPARTMENT.

154 Patients were supplied with the following Artificial Dentures:—

Whole Sets of Teeth	31
Full Upper Sets,	48
" Lower Sets	2
" Upper Set Blocks	1
Partial Upper Sets	76
" Lower Sets	4
Obturator*	2
Teeth Mounted on Metal Plates	528
" Hard Rubber Base	1481
Whole Number of Gum Teeth	902
" " Plain Teeth	1107
Whole number of Teeth Mounted,	2009

J. M. BARSTOW, *Demonstrator.*

COMMENCEMENT OF THE PHILADELPHIA DENTAL COLLEGE.

THE second annual commencement of the Philadelphia Dental College was held at Concert Hall, Philadelphia, March 1st, 1865.

The valedictory was delivered by J. H. McQuillen, D.D.S., Professor of Anatomy, Physiology, and Hygiene.

The number of matriculants for the session was twenty-six.

The degree of D.D.S. was conferred on the following gentlemen, by the President, Rev. Richard Newton, D.D.:—

*These were made for soldiers who lost their teeth and adjacent bones from gunshot wounds.

NAME.	RESIDENCE.	TITLE OF THESIS.
CHARLES BARNES,	New York,	Treatment of Exposed Dental Pulp.
J. H. BORNEMAN,	Pennsylvania,	Dental Caries.
GEORGE BOWERS,	Vermont,	Artificial Dentures.
W. S. ELLIOTT,	New York,	Hyperæsthesia.
ALBERT T. EMERY,	Massachusetts,	Mechanical Dentistry.
BENJAMIN U. GAUNT,	New Jersey,	Circulation.
J. S. HURLBUT,	Massachusetts,	Dental Manipulations.
JAMES McMANUS,	Connecticut,	Preservation of the Deciduous Teeth.
T. B. PERPIGNAN,	New York,	Causes and Treatment of Dental Caries.
F. D. PERRY,	Massachusetts,	Absorption.
E. J. ROBERTS,	Maine,	The Fifth Pair of Nerves.
G. O. ROGERS,	New Hampshire,	Anæsthesia.
C. STODDARD SMITH,	Illinois,	Alveola-dental Periostitis.
EDWARD P. STARBUCK,	Massachusetts,	Odontalgia.
WILLIAM H. WAITE,	England,	Removal of the Teeth.

The following are the reports of the Demonstrators:—

OPERATIVE DEPARTMENT.

Gold Fillings	315
Tin Fillings	467
Amalgam Fillings	77
Oxychloride of Zinc	8
Hill's Stopping	17
Pulps Treated	164
Treatment of Periodontitis	15
Treatment of Alveolar Abscess	13
Sets of Teeth Scaled	72
Irregularities corrected	6
Pivot Teeth inserted	6
Roots extracted	943
Teeth extracted	1067
Whole number of Operations	3170

R. J. HOFFNER, *Demonstrator.*

MECHANICAL DEPARTMENT.

Whole Sets of Teeth, Vulcanite Base	20
Full Upper Sets	47
Full Lower Sets	4
Partial Lower Sets	3
Full Upper Sets, Gold Base	1
Full Upper Sets, Platina Base	1
Whole Sets, Silver Base	1
Partial Sets, "	3
Non-Sectional Blockwork, Upper Sets	2
Full Lower, Cheoplasty	2
Obturator, Vulcanite	3
Teeth Manufactured, Plain	50
" " Carved Blocks, Upper Sets	4
" " " " Lower Sets	2
" " Single Gum	35
Silver Plate and Solder made	oz. 3
Whole number of Teeth Mounted	1864

WILLIAM P. HENRY, *Demonstrator.*

AMERICAN DENTAL ASSOCIATION.

The Fifth Annual Meeting of the American Dental Association will be held at Chicago, Ill., on Tuesday, July 25, 1865, commencing at 10 o'clock, A. M. It seems almost unnecessary to impress upon delegates the importance of their presence, since the very large attendance last session was a signal demonstration of the interest and sympathy of the profession; which of itself will undoubtedly prove sufficient to establish the popularity of an association based upon representative interests. The preparation of voluntary essays is at this time urged upon the delegates not occupying positions upon any of the various committees, as every such contribution will serve to render the proceedings additionally interesting and profitable.

In addition to the ordinary exercises, clinics will be held and various dental operations performed.

GEORGE W. ELLIS,
Corresponding Secretary.

NOTICES OF BOOKS.

THE DENTAL TIMES for April, is laden with a goodly stock of interesting matter, chiefly original communications from the members of the Faculty of the Pennsylvania College, and others. The April number closes the second volume.

"Professional Education" is the subject of an essay by Prof. Buckingham, which we transcribe. An answer to it will be found in the Dental Cosmos, for May.

PROFESSIONAL EDUCATION.

BY T. L. BUCKINGHAM, D. D. S.

The following extract is taken from the "Dental Review," a most excellent quarterly Journal, published in London.

"Considering that only a few years have passed since the practitioners of Dental Surgery commenced their praiseworthy efforts to elevate the standard of the Profession, it is surprising that so much has been accomplished in England. The first agitation, the following separation, and final union of active members of our calling have actually produced a state of things in advance of any country in the world, not excepting America. In the latter country it is true, a curriculum of study had been marked out for the aspirant to professional distinction, for a period many years anterior to the dental movement in Great Britain; but, with every desire to give credit to the examinations of

the several licensed Dental Colleges in America, we fear that the number of these institutions tends to thwart the very object for which they were established, and that, in consequence, the standard of professional education is tending downward rather than upward. Competition is all very well up to a certain point, but in the matter of Dental Colleges in America, it is carried to excess; and the legalized institution offering easy means towards obtaining the D.D.S. degree, is more likely to obtain candidates than one which confers the same degree at greater cost of time, trouble and expense. Nevertheless, the Profession in America is justly entitled to praise for the spirit it has long possessed, and still possesses; and we trust a like spirit will permeate the British dentists; but having deliberately acknowledged the College of Surgeons as our head, we cannot but feel that there is greater security than if there were a chance of competition in examinations, in so small, comparatively speaking, a body as ours. It was either one thing or another—a single independent college, or a union with the College of Surgeons. The Profession, after ample opportunity of discussion, chose the latter; and to it let us loyally adhere."

Is the standard of dental education tending downwards rather than upwards? This is a question that should interest every intelligent dentist. We do not intend to argue the point whether a student can be as well qualified in a private office to practice, as he can in a dental college; the time for such arguments is passed, and settled, we think, in favor of colleges; but whether the multiplicity of colleges tend to raise or lower "the standard of professional education" is now the question. While there were but three dental colleges in the United States—the Baltimore, Ohio and Pennsylvania—there is no question but they tended to strengthen each other, and perhaps several others, located in various parts of the country, might have been a benefit. But when two are located very near to each other, so that the students, before they enter, can go from one to the other, and see with which they can make the easiest terms, it becomes a question whether they are not rather an injury than a benefit.

If we refer to the medical colleges, some information may probably be derived, and we refer to them more freely, as they have been held up as examples by those who advocate the increased number of dental colleges. But we do not admit that one is a fair representation of the other. No person attempts to practice medicine in this country without a diploma—the profession would not recognize him, nor would the community encourage him.

What is the case with dentists? The community does not require them to have a diploma, nor do those who have graduated refuse to associate with those who do not; they are admitted to all our conventions and associations as readily without as they are with a diploma, so that there is no distinction between those who attend colleges and those who do not. But, waiving the distinctions between the two professions, we will accept them as fair representatives of each other, and confine ourselves to the colleges of our own city, excluding the Eclectic, Homœopathic and Female Colleges, as they have peculiarities which cannot be fairly brought in.

The first college established in this city was the University of Pennsylvania. It was not only the first, but was, for a long time, the only medical college in this country. It has just held its one hundred and fifteenth commencement; for over sixty years it has occupied a magnificent building; it has the largest medical museum in the country, and all the appliances necessary for teaching, with a very large fund invested for its benefit.

"Such has been the prosperity of this medical institution, the first founded in our country, that from the most accurate calculations that can be made, up to 1830, it is computed that between seven and eight thousand young men have received instruction within its walls, since its establishment, and from this source, the remotest parts of our Union have been furnished with learned physicians, who are ornaments to their profession." The class numbered yearly, from three to six hundred students. I have been particular in stating the advantages of this school, for reasons which will be given hereafter.

The second college we refer to, is the Jefferson Medical College, which was opened in November of 1825. The faculty was composed of men of reputation and perseverance. It struggled along for fifteen years before any one could tell whether it would live or not. It has now, by the perseverance of the faculty, attained a position equal to the first in everything except age. But now let us notice what effect these colleges have had on each other. The first, until recently, held its sessions from nearly the first of October to April, or nearly six months, while the sessions at the Jefferson commenced about the same time, and closed by the first of March. The fees were also much higher at the University than they were at the Jefferson. The University has since reduced their fees and shortened the term to correspond with the Jefferson. Why was this change made? Was six months longer than was necessary to teach medicine, or was it because the one that offered the shortest terms and the lowest fees began to have as many or more students than the other. Certainly, the session was not too long, for the Professors had to condense their lectures to get them into the course. The students were compelled to attend six or seven lectures each day, or, what was equivalent, attend the Hospital or a clinic, and also the examinations and dissections at night, so that there was little or no time left for reading or reviewing the lectures. If the sessions had been extended to eight months, instead of shortened, the students would have been much benefitted.

We have selected these two colleges that some delight to hold up as examples, to show that where two schools are located near each other, the one offering the greatest inducements either in time or money, will compel the other to come to its standard, providing they are both of equal reputation.

But what has become of the four or five other colleges that have been established here? If the increased number of colleges is a benefit to each other by attracting and increasing the number of students, as some persons contend they do, surely, in a city where there are nearly one thousand medical students, who pay at least one hundred

thousand dollars annually for medical instruction, more than two colleges should be sustained,

But they were not sustained; the class was often so small that it did not pay the expense of teaching. Some of them closed their doors honorably; while others struggled on for a number of years, resorting to such means to attract students as rendered them a reproach to the name of colleges, and some others even went so far as to sell diplomas to persons who had never heard a lecture in their rooms. It would not take a lengthy argument to prove that such colleges do not tend to elevate a profession. We will not now attempt to compare the dental colleges that are now in operation, with each other, but leave that to some person who has no connection with them. Still, we must say that the standard of dental education in them is rather tending downwards than upwards. Cases could be pointed to where students have graduated in two months' instruction; and in other cases, they have entered on the express condition that they should graduate at the next commencement.

The number of medical students attending colleges in this city, in 1862, was nine hundred and eighty-two. (982.)

The number of dental students, the same year attending college, was forty-one. (41.)

If nine hundred and eighty-two students would not sustain more than two medical colleges, what inducements could there have been to establish two dental schools? Certainly it could not have been that the number of students required it. It may have been that those who wanted to teach required some place to show their talents; or some one who could not rule would not submit to be governed, or for some other cause not yet made public. But let the object have been what it would, we think the profession, if they have thought on the subject, must see that it was not that the two colleges should work harmoniously, and act and react on each other, so that one might be a benefit to the other.

Let the standard of dental education in the colleges tend upwards or downwards, we are satisfied, in the profession at large, it is on the advance. The dental periodicals, the frequent meeting together of the members, and at these meetings the desire to show and explain every mode of operating; the comparing of operations as they come into the office, and last, though not least, the knowledge of the public on dental operations, all tend to advance the profession. We think it can safely be said that the profession stands higher now than it has at any other period.

ITEMS.

DR. GEORGE WATT, who for nearly nine years was editorially connected with the *Dental Register of the West*, in his valedictory says: "Taking up the editorial pen was the occasion of much anxiety; laying it down again stirs the fount of feeling still deeper. But, now, as then, the matter has been carefully weighed before the responsibility is taken.

Does the reader doubt it? Then listen to what is involved in the step. Personally, to the writer is lost a great portion of his interest in the profession, and a much great portion of the profession's interest in him. Persons who seldom meet and converse together cease to be warmly interested in each other. The monthly conversation of the *Register* with its readers no longer forms a tie between the writer and his brethren. Now they are brethren of a scattered household, and he is to them as a stranger." Dr. Watt was an agreeable and instructive writer, and one who commanded the respect and love of all with whom he had intercourse. Some of his contributions to the *Register* have been rather severe on certain members of the profession, but since they were written without malice and the disposition of the writer to indulge in pleasantry once in awhile being well known, they were passed over without engendering a great deal of ill feeling. Such a man as Dr. Watt cannot long be content in allowing his pen to lie idle. Let us hope that he will soon take it up again.

PROF. C. N. PIERCE has resigned his active duties in the Faculty of the Pennsylvania College of Dental Surgery. The Trustees of the College, in consideration of the valuable services rendered while in the Faculty, unanimously elected him Emeritus Professor of Operative Dentistry. Dr. James Truman was elected to fill the vacancy.

DR. THOMAS W. EVANS, of Paris, in a letter to the members of the Massachusetts Dental Association, claims to have discovered, in 1848, a plan for making hard rubber, by the application of dry heat to *caoutchouc* combined with sulphur. Subsequently, by employing moist heat, and then steam, he obtained more satisfactory results. The specimens of the substance finally produced, were in every respect identical with the vulcanized india rubber now in use, with the exception of color.

THE AMERICAN DENTAL ASSOCIATION will hold its next annual session at Chicago, Ill., on the last Tuesday of July, 1865.

THE AMERICAN DENTAL CONVENTION will meet at White Sulphur Springs, Ohio, on the first Tuesday of August, 1865, at 10 o'clock, A. M.

THE second annual meeting of CENTRAL STATES ASSOCIATION OF DENTAL SURGEONS will be held in Louisville, Ky., at the Kentucky Medical College, commencing on Tuesday, July 18th, at 10 o'clock, A. M.

THE INDIANA STATE DENTAL ASSOCIATION will hold its next annual meeting at Indianapolis, on the last Tuesday of July, 1865.

VARIETIES.

IN connection with cleaning the teeth, the throat should be gargled with cold water every morning.

A LITTLE pulverised charcoal held in the mouth several times a day will remove the fetor arising from diseased gums or from decayed teeth.

A METHOD of coating wood with varnish hard as stone, has been recently introduced in Germany. The ingredients are forty parts of chalk, forty of rosin, four of linseed oil, to be melted together in an iron pot. One part of native oxide of copper, and one of sulphuric acid, are then to be added, after which the composition is ready for use. It is applied hot to the wood with a brush, in the same way as paint, and, as before observed, becomes exceedingly hard on drying.

A FREE use of fluids tends to keep the bowels open, but at the expense of healthy digestion. As an emetic, there is nothing, perhaps which can be so highly recommended as simple water, if the object be merely to evacuate the stomach. It should be drank hastily, and until vomiting occur. One pint may be sufficient, or it may require three quarts; but except a person be poisoned, it is judged to be sure in case of every person, and in most cases of poisoning. It acts more easily than anything else, not being apt to cause retching, and is not unpleasant to take. If the water be warm it acts more quickly, and its action takes place more speedily if the throat be acted upon by a feather or the finger. Warm water is more apt to make a person feel sick, but the water should not be quite cold, as such a quantity of cold substance would be likely to produce a chill. When an emetic is given, a physician frequently has other objects in view beside emptying the stomach. Water, perhaps, then, would not be the best thing.

DR. CARPENTER, who ranks among the first scientific men of Great Britain, says: "Having given considerable attention to the refuted phenomena of mesmerism, electro-biology, etc., I have had occasion to observe, that the *want of scientific habits of mind*, is the source of a vast amount of prevalent misconception, as to what constitutes adequate proof of the marvels reported by witnesses, neither untruthful nor unintelligent, as to ordinary matters. I could mention striking incidents of misconception in men of high literary cultivation, or high mathematical attainments; whilst I have met with no one who had undergone the discipline of an adequate course of scientific study, who has not at once recognized the fallacies in such testimony when they have been pointed out to him."

A DENTIST, love, makes teeth of bone,
For those whom fate hath left without;
And finds provision for his own,
By pulling other people's out.

It is said that liquid silix is excellent for cementing teeth broken from plaster casts. Moisten the broken parts with the preparation, and place on the stove for about half an hour.

THE DENTAL QUARTERLY.

VOL. 4. PHILADELPHIA, SEPTEMBER, 1865. No. 3.

ATMOSPHERIC PRESSURE.

ALTHOUGH great care should invariably be observed on taking an impression, the fit of an upper plate, for the support of which atmospheric pressure is relied upon, does not always depend directly upon it. A plate may fit a plaster cast made from an excellent impression in every particular, yet no reliable suction be obtained. Failures are common, in rubber work especially, where the adaptation of the base to the cast is supposed to be faultless; proving that a misfit is not wholly consequent upon a poor impression, the shrinkage of metal, the spreading of a male die in swagging, or the warping of a plate in soldering. In the majority of failures, however, where metal is used as a base, the cause may be traced to one or more of the above mishaps. It is frequently found to be necessary to bend a plate of this description a sixteenth, or even an eighth of an inch from the roof of the mouth, in order to produce a vacuum. In such instances, it is evident, that the very best mechanical skill would be required to make a rubber plate adhere, and to save the humiliating, disheartening confession, "It is impossible to get a suction in *your* case." In vulcanite, frequently, the trial plate of gutta-percha will adhere firmly to the mouth, whilst the rubber, finished on the very same cast, will not. We have a case in mind, where the exact fit to the plaster cast, (as we have reason to believe, a perfect fac-simile of the jaw,) would not allow of a vacuum being produced; nor could it be produced, until at least one-sixteenth of the alveolar ridge on the plaster cast had been pared away. This we will cite:

Patient, an old lady, aged about sixty-five years. The roots and teeth in the right side of the jaw had but recently been extracted; this portion of the alveolar ridge presented a healthy appearance, being

hard and painless to the touch. The left side was absorbed considerably, the gum being soft and yielding on pressure. A plaster impression of the mouth was taken, and to all appearances an accurate one; a gutta-percha plate was moulded on this, and the teeth fitted on in the usual way. The case was successfully vulcanized, finished, and placed in the mouth; it adhered slightly, but not sufficiently to subserve the purpose of mastication. After wearing it two or three weeks, all endeavors to eat even the most tender food being fruitless, the lady returned; a minute examination of the mouth and of the plate, and of the two in their relative position, was made. We discovered that pressure on the left side of the plate would easily dislodge it, whilst on the right side it would not, showing that the plate did not bear sufficiently hard upon the left side. To remedy this it was of course necessary to make a new plate; another impression was carefully obtained, and a plaster cast taken from it; in fitting the trial plate, the utmost care was observed, proceeding slowly, and, as we hoped, surely; after moulding the gutta-percha plate, two pieces of stout annealed binding wire were bent while warm, and secured by melted wax; this rendered it stiff when cool, and prevented it changing in the mouth; at first there was no suction, or if any, but very little; on pressing the left side, the plate would rock and fall; a small portion of the left side of the plaster cast was then pared off and the plate and wires bent to fit; the suction was improved, but the plate would still yield and fall; the process of paring the left side of the plaster cast, and conforming the plate thereto, was repeated several times, when our patience was rewarded with a perfect vacuum. Being satisfied with the trial plate, a cast was obtained from it; after arranging the teeth, the rubber plate was vulcanized on this and finished, and we need hardly say that the fit was satisfactory.

It sometimes happens that the trial plate answers every purpose admirably, whilst the rubber plate vulcanized on the very same cast that the trial plate was moulded on, provokingly refuses to "go home." This is accounted for on the supposition that the shrinkage of the gutta-percha on cooling, prevents it fitting perfectly in the roof of the mouth, which, in such instances, being generally very hard, undue pressure against it is avoided, allowing other parts of the plate to sink into the soft parts of the mouth. The gutta-percha also fails to be imbedded in the little valleys formed by the rugæ, thus creating numerous little cells, which add greatly to the atmospheric pressure when the air is exhausted from them. The rubber running, when heated, into these little places, and adapting itself perfectly to every part of the cast, and

then becoming hardened by the vulcanizing process, spoils, by this insinuating way, what the stiffness of the trial plate perfects.

In mouths with hard roofs and adjacent soft parts into which it is necessary for the plate to press, the hard part should be built on with plaster and the soft part pared away, varying in amount to the softness of the gum.

A. T.

A CASE.—ITS TREATMENT.

BY S. DRIGGS.

Read before the Mississippi Valley Dental Association.

As the subject of the restoration of the loss of the bony structure of the mouth has been attracting considerable attention of late years, I beg leave to present the following case :

About the middle of August last, a gentleman thirty years of age, bilious temperament, and apparently good constitution, presented himself for consultation and treatment. Pus was issuing from the nostril in profuse quantities, the mucous membrane of the left side of the palatine vault was largely distended, and the nerve of the superior left lateral incisor was dead. Upon raising the lip, a slight cicatrix showed that pus had previously found exit at that point. Not suspecting the extent of the disease, I introduced a lancet in the tumor of the palatine arch to allow the large quantity of pus collected there to escape ; but, to my astonishment, the instrument, after passing through the mucous membrane, met with no resistance. To ascertain clearly the extent of disease, I passed a probe through the incision, through the palate bone, into the maxillary sinus ; from thence through the fistulous canal, and out at its orifice on the labial side of the alveolus, between the lateral incisor and canine. Absorption of bone had resulted in an *aperture* through the palatine arch, in size about three lines in width by fifteen in length.

Treatment.—After copious injections of warm water, a tent of cotton was placed in the incision, and the patient dismissed for the day. The cotton was removed every alternate day for two weeks, and the cavity thoroughly cleansed, and a solution of sulphate of zinc injected. During that time I had endeavored to accomplish nothing more than lessening the quantity of purulent matter.

In the meantime, the propriety, or impropriety, of extracting the offending tooth had been considered, and I determined to make a vigorous effort for its salvation. The crown was well preserved and the color good ; and I could not reconcile it with my sense of duty to my

patient and to the profession to make it a "military necessity" and pass the sentence of banishment upon it without a fair and patient trial. Writers upon the subject have, I know, invariably condemned such offenders to the tender mercies of the forceps ; but I have not always found it best to follow blindly rules which are supposed to have no exceptions.

An old plug was now removed from the anterior approximal surface, and nerve canal and crown plugged in the usual manner. The seton was removed from the incision before mentioned, and the membrane allowed to heal. The fistulous orifice between the lateral incisor and canine was enlarged to the full distance between them, and all subsequent applications introduced thereat. Injections of tepid water and dressings of lint, saturated with dilute creosote, were applied as often as the patient could conveniently attend, which, as he resided eight miles in the country, and was engaged in business which called him much from home, was sometimes twice and sometimes once a week. This treatment, with an occasional change to iodine, having been continued for a month without satisfactorily changing the character of the discharge, my convictions as to the existence of at least mercurio-syphilitic taint were strengthened, and iodine of potassium, in comp. sirup of sarsaparilla, was prescribed and the creosote pushed (as Dr. Atkinson would say) "heroically."

Decided manifestations of improvement soon became apparent ; but the patient, beginning to complain also of great circum-orbital pain, it was considered as a remonstrance against the prolongation of such heroic treatment, and milder applications, such as injections of tincture of arnica and glycerine *a a* were found beneficial, and have been continued, with an occasional stimulus from very dilute creosote, to the present time.

Healthy granulations were rapidly formed, and ossification has taken place, to the extent of the complete restoration of the palate bone.

My attention is now being directed to the restoration of the lost alveolar substance, which, I think, will be speedily effected.

It is a source of gratification to myself, as well as to the patient that the diseased tooth was not extracted. It has not prevented, although it may have retarded the cure. It is not always well "to do evil that good may come." A little patience, a little energy, and considerable perseverance will sometimes enable us to accomplish what we are accustomed to regard as impracticable.

In conclusion, gentlemen, I acknowledge that I have groped my way along with but a dim conception and a beggarly knowledge of appro-

priate remedies, the manner of their application, their "modus operandi," or the exact results to be expected. You will, therefore, pardon any faults which a better knowledge and a larger experience have enabled you to discern.

DENTAL FEES.

BY B. WOOD, M. D., ALBANY, N. Y.

ALTHOUGH this subject has become rather trite, it is one which will bear enforcing. "We" have already given "our views", but will venture to add a few remarks supplementary thereto.

As before stated, we find the profession virtually arranged in two classes on the Fee Question—the one contending for such compensation as shall warrant the exercise of the highest skill and the bestowment of the greatest benefit upon their patients; the other endeavoring to bring down the price to the lowest requirements of the masses. It may be admitted that, to a certain extent, self-interest actuates both classes—at least, so far as to get the full value of their services. But while the one class is ambitious to render what will commend itself to liberal compensation, the study of the other is to do as little as possible at the smallest rates. The one caters to the highest bidder, the other to the lowest. When actuated by avarice, the one tends to extortion, the other to deception and imposition. /

The inventive genius and latent skill of the American people are so fertile and so adequate to any demand which will compensate the doing, that the public, by simply holding out adequate reward, could enlist the best talent in the land into service in the dental profession, and obtain for themselves the greatest benefits in the capacity of human skill. But the masses, and more especially the wealthy portion, having, from false training, habit or sentiment, overspreading this country like an epidemic, come to value money for its own sake, rather, than for the substantial benefits which it will purchase, lend the weight of encouragement to those who, for the smallest fee, confer the least. Practically, they hold out a premium, not for the maximum but for the minimum skill, and, so doing, actually pay extortionate rates for miserable products.

But notwithstanding this, humanity, honor, and honesty, clearly dictate which side our profession ought to take. This needs no argument; that the "best policy" leans the same way. Moreover, there is positive

encouragement. A portion of the community, though it be a small portion, do seek the best services. They pay the rates necessary to secure them—the proof of earnest seeking; some, not the most willingly, it is true, but who will nevertheless pay, rather than forego the benefits. In addition to a just compensation, actual generosity might indeed be looked for on the part of wealthy patrons, in the way of bounties to unusual excellence in the profession, since artists, physicians, clergymen, men of letters and science frequently become the recipients of substantial appreciation of merit and fidelity, instances of which, in the case of dentists, are rarely known, however incalculable the benefit conferred. But then, on the other hand, the profession has not been signalized for the offer or bestowment of bounties for contributions to the resources of the art, conceiving a “vote of thanks” or a “medal” to be ample compensation for a life of toil and expenditure, and conceiving that such honor ought to render the recipients under enduring obligation to freely surrender up to the profession, or to whom the profession prefers to patronize, all pecuniary interest in their productions.

But let it suffice that there is a class of community who will and do concede a fair remuneration for the best services, (which really is all a manly independence will ask,) and that this class, amid the ebbs and flows of society, are sensibly on the increase. And when we consider that, purified by the scourge of war, elevated to nobler motives and impulses than the gratification of mere cupidity, ostentation and folly, schooled to self sacrifices, and habituated to acts of beneficence, the whole country has reached a higher stand point, from which wealth will be more generally recognized of value, chiefly as a means of procuring and dispensing real benefits, there is everything to encourage those in our profession who aim by their *good works* to confer the greatest good.

On the other hand, there is no hope for the other class of operators. To whatever depth they may plunge in the scale of prices and quality of operations, a “lower depth yawns to receive them.” The patronage they cater to in respect to *price*, will never be satisfied, even on this point. The search being for “cheap dentistry” nothing will be esteemed cheap except it be lower than the lowest. It is a habit or passion which strengthens as it is fed. It is a monomania which regards neither utility nor beauty, and often reveals itself in nothing but Dentistry—frequently confined to artificial teeth. The same individuals demand that, at any cost, their attire, the bonnet, the ribbons, the hat, cravat and collar, the hair and whiskers, curls, mustache, wig, etc.,

shall be becoming ; their portraits, whether by pencil or photograph, must be artistic and natural ; but the *teeth*—"CHEAP."

All this from dint of effort to bring dentistry "within the reach of all," based on a low estimate of the nature of our calling. Why should it cost more to make and set a couple of plates of artificial teeth than to shoe a horse ? Here, in Albany, a few resolutely stood up against the "outside pressure" for the enormous fee of fifty cents for extracting a tooth, while the rest "pulled" for "a quarter." Why not at a quarter ? A blacksmith will jerk out a horse nail for less money ; and what is the difference ? So the tooth puller lowers his figures, and will pull for still less by the quantity ; and if there are new teeth to set, will take out the old ones gratis, on the principle that the blacksmith considers the removal of the old shoe a part of the new shoeing.

It is a laudable competition, prompted by benevolence to the poorer classes.

But take some data from actual cases : A lady, fluttering in silks and jewelry, comes and has a tooth extracted. She is astounded at the fee—never heard of such a thing as charging more than twenty-five cents. Fumbles for her money and finds she didn't bring but that amount, not expecting it would be more ; promises to send the rest, (but never does,) and sails out "*dissatisfied*."

A ragged "darkey" comes next, pays his fifty cents with thanks, and goes rejoicing. A rich merchant, having two or three stores in operation, wants to know the price of repivoting a tooth—"has the tooth, all it needs is a hickory pin, and the old one drilled out." But the price appals him. Wants to know why your charges are so much higher than others ; tells you the "customary price is a quarter ;" has had the same tooth put in several times for that :—goes off to hunt up some one who wont extort. A poor decent looking man calls for a similar operation, pays the fee, "saying it is reasonable enough."

Now, there is no use of parleying with patients about the price ; it loses time and gains nothing. Still worse is it to overrate the *cost of material* in extenuation of the fee, as many do. In the place of my former residence there was a pamphlet published, wherein the author of it justified his underworking. He figured up the cost of gold used in plugs, at $6\frac{1}{4}$ to $18\frac{3}{4}$ cts., and showed by mathematical calculation, that he made abundant "profit" upon the cost, etc. When inquired of as to said cost, my reply was, it might be " $6\frac{1}{4}$ cts." or five dollars, according to circumstances ; I did not know and did not care ; that we did not charge for material, and did not look to the premium on it for remunerations ; but based the fee upon the skill, time and attention

devoted for the benefit of our cases. Upon the whole, it resulted in a far juster appreciation of dental services than if I had elaborated about the number of sheets used, and all that.

I hold that the cost of material is of no more concern to the patient than the cost of the instruments with which we apply it, or than the cost of drugs in a physician's prescriptions. There is, very properly, a scale, according to the kind of material, but this should be graduated by the time and skill involved in their use, rather than upon estimates of the difference in cost.

These remarks refer to extremes, believing they will apply elsewhere, and that it is well to address the *common sense* of all, however low in the scale. To induce the meanest operators to charge better prices, is so far, an inducement to do better work.—*Dental Register*.

FEES FOR DENTAL PUPILAGE.

BY C. M. WRIGHT.

Read before the Cincinnati Dental Society.

GENTLEMEN:—I will not presume or attempt to instruct or even entertain so learned a body as the Cincinnati Dental Association, and, therefore, have turned my back on scientific matters and the subject chosen for discussion this evening. In regard to many of the important questions brought before and so ably disposed of by this society, I, of course, have opinions, and am forming opinions; but in committing to paper thoughts upon such subjects as "The Reproduction of Bone," (with or without the assistance of a periosteum,) "Sensitive Dentine," "Periostitis," and others of equal importance, a natural caution makes me doubt the solidity of the ground upon which I sometimes stand, and fear the consequences of getting beyond my depth. Then, lest I should be drowned, or, at least, flounder about so in the deep waters of these deep subjects, I beg leave to suggest a matter which I cannot but think worthy of some attention by members of our profession. It is now the custom, I believe, among many dentists to charge from one to five hundred dollars for "dental instruction" to any young man whose tastes or hopes are for the practice of dentistry. Many of these gentlemen themselves would never have been in the profession, perhaps, if this bar of "a fee" had been placed in their way. It seems to me to be not only an injustice to the student and to the dental profession, but an act which might, with propriety, be termed "unprofessional." It does not seem to me to be in accordance with the spirit of so many essays and speeches now floating about in our periodicals, about Popular Educa-

tion, People's Journals, Instructing Patients, &c. It places the dentist in the light of a juggler, whose arts and tricks will be taught or sold for a consideration. The dentist, like the veiled prophet of Kerassen, has arts which he practises, and which he scrupulously hides from the public eye; but unlike the old prophet, he will disclose his ugly phiz for a hundred dollars. When a dentist proclaims that he has methods of practice unknown to the profession—when he extracts teeth by a new and original process, or plugs with a new material, and refuses to open his laboratory or operating rooms to his professional brothers, or refuses to explain the relation existing between himself and the unclean spirits of the air who assist him, he is immediately and justly pronounced a charlatan, and silently, even tenderly, dropped from his professional standing among the dentists. But when a dentist, in full practice, who has need of an assistant, for malleting, and for the dirty sand and plaster, zinc and lead-work of his laboratory, agrees to permit a young man to come into his office and do all he can to assist his preceptor for a hundred or even five hundred dollars, he is, no doubt, performing a noble work for his beloved profession. A dentist should not, in my opinion, take a student, unless he is satisfied that the applicant is fitted for a dental student; and if he is capable of making a dentist of himself, he will be of use to his preceptor in a very few months. Then, a dentist should not admit a student, unless he expects to devote himself faithfully to the instruction of that student. He should not only direct his reading, but “quiz” the pupil thoroughly. He should offer as many opportunities as possible for his student to witness operations; and work done by the student should be carefully criticised. It is not expected, however, that a man with a large practice will give up his patients or neglect his engagements for the benefit of any young man; and it is not often the case, even if five hundred dollars have been paid as the pupilage fee. Five hundred—even a thousand dollars—will not pay a good dentist for time devoted to his student, if he neglects his patients; but then if we only work for *fees*, why will we talk and write so much about our love for our adored profession—about our anxiety for its rapid advancement—about our duties to our chosen profession, aside from greenback considerations—about the necessity for sacrifices and god-like energy from each and every member of our honorable body, for the sole benefit of his profession? Why are we interested in our dental colleges, our dental societies? Why do we demand a high standard of attainments from members, and write papers for our periodicals about the duties of students and the advantage of dentistry, and laugh to scorn, or point the finger of contempt at the man who

regards a *fee* more than he does a good operation? Why do we do and say all this, and yet demand a property qualification of our students? Yes, sir, we say to a young man with his mind bent on dentistry, "We think you possess first-rate abilities; you have a good education; you are something of a mechanic; you seem to have a noble ambition and right feelings about dentistry; but have you got a hundred dollars for our *fee*? If you have not, you'd better turn your attention to shoe-making or school-teaching; you'll never do for a professional gentleman." Of course, a good dental instruction is worth many thousands of dollars to a student; but then, do we not always pocket a fee of this kind as a clear gain, with the secret satisfaction that we have, at the same time, secured an errand-boy and an assistant, in the bargain!

Gentlemen, I did not commence this with the intention of saying so much, or of arguing the case. I desire simply, if possible, to provoke an opinion or opinions from others better calculated to do the subject justice.

THE AMERICAN DENTAL ASSOCIATION.

THE AMERICAN DENTAL ASSOCIATION held its fifth annual meeting at the Opera House, Chicago, on Tuesday, July 25th. The following Societies with their delegates were represented:

Brooklyn Dental Association.—W. H. Atkinson, C. P. Fitch, G. A. Mills, W. C. Horne,

Buffalo Dental Association.—G. B. Snow.

Beaver Meadow Valley Dental Association.—T. J. Chandler.

Central States Dental Association.—W. H. Morgan, B. M. Gildea, G. B. Fittz, J. L. Nourse.

Central New York Dental Association.—John E. Savery.

Chicago Dental Society.—J. C. Fuller, A. W. Freeman, M. W. S. Sherwood, J. A. Kennicott, E. R. E. Carpenter.

Cincinnati Dental Association.—H. A. Smith.

Connecticut State Dental Association.—W. W. Sheffield, A. Hill.

Connecticut Valley Dental Association.—W. H. Jones.

Delaware State Dental Association.—B. J. Bing.

Hartford Society of Dentists.—J. McManus.

Hudson Valley Dental Association.—J. N. Scranton.

Illinois State Dental Association.—S. Babcock, A. C. Van Sant, C. B. Rising, O. Wilson, M. S. Dean, A. E. Gibbs, E. H. Kilbourne, J. H. Young, N. R. Griswold, Edgar Park.

Indiana State Dental Association.—M. Wells, P. G. C. Hunt, D. M. Weld, J. Richardson.

Iowa State Dental Association.—H. S. Chase, G. W. Nichols, E. L. Clark, J. P. Porter, N. H. Tulloss.

Kentucky State Dental Association.—W. G. Redman, W. D. Stone.

Merrimack Valley Dental Association.—A. Lawrence, G. A. Gerry, J. D. Kilbourne.

Mad River Valley Dental Association.—A. A. Blount, G. L. Payne, N. W. Williams.

Massachusetts Dental Association.—L. D. Shepard, B. S. Codman, I. J. Wetherbee, H. F. Bishop, J. A. Salmon.

Mississippi Valley Dental Association.—W. H. Sedgwick, W. Taft, W. P. Horton, G. W. Keely.

Michigan State Dental Association.—J. A. Watling, C. B. Porter, H. H. Jackson, J. A. Harris, B. Bannister, G. W. Stone, G. L. Field.

New Haven Dental Society.—J. H. Smith, E. Strong.

Northern Ohio Dental Association.—C. C. Carroll, C. H. Harroun.

New York Society of Dental Surgeons.—John Allen, W. C. Tinker.

New York State Dental Delegation.—Jesse A. Perkins.

Ohio Dental College Association.—J. C. Dean, G. H. Cushing, Geo. Watt, A. Berry, A. S. Talbot.

Pennsylvania College of Dental Surgeons.—T. L. Buckingham.

Pennsylvania Association of Dental Surgeons.—Spencer Roberts.

Philadelphia Dental College.—J. H. McQuillen.

Southwestern New York and Northwestern Pennsylvania.—J. C. Gifford.

St. Louis Dental Association.—W. N. Morrison, I. Forbes, H. E. Peebles, Henry Baron.

Wabash Valley Dental Association.—A. M. Moore, I. Knapp.

Western Dental Association.—C. W. Rivers, S. L. Edwards, J. W. Ellis, D. W. Perkins, H. N. Lewis, G. S. Miles, T. P. Abel.

Western New York Dental Association.—A. P. Southwick, E. H. Danforth.

Besides these there was a large number of permanent members present.

Dr. Allport read the following address of welcome to the Association:

Mr. President and Gentlemen of the American Dental Association: In bidding you welcome to the City of Chicago, on an occasion so interesting and auspicious to our profession as the present, it may not be deemed inappropriate to the time and place of our meeting, to indulge in a brief retrospect of the past.

In the summer of 1859, twenty-five members of the dental profession met in convention at Niagara Falls, to consult together as to the expediency of forming a National Association upon the representative basis. All, I believe, who were present, felt that if such an association could be formed, and should receive the sanction and co-operation of any considerable portion of the better class of practitioners, the best interest of the profession would be promoted, and great good result to the public.

The number of state or local societies, then existing, to send delegates to the annual meetings of an association of this kind, was so very limited that but few even of the small number present felt at all sanguine of the ultimate success of such an enterprise. But in view of the many great

and good results anticipated from such an association, in case it should be crowned with success, and in the hope that the formation of local societies would be stimulated thereby, it was determined to take the initiatory steps for the organization, deferring final action until the following year.

At the appointed time, July 31, 1860, *twenty-three* delegates only, of the various dental societies and colleges then existing, met in the City of Washington, and the American Dental Association was organized, and entered upon its work. Five years only have passed, and from what was a small and doubtful beginning, by the steady and well-directed efforts of those who were instrumental in its formation, this Association has become one of the most successful enterprises of the profession, and one of the most useful and influential dental societies in the world.

Of the professional standing of those who have attended as delegates, the annual meetings of this Association, and have been accustomed to take part in its proceedings, it is not necessary for me to speak. They are universally acknowledged as standing among the most scientific and successful operators of our time and country, and as belonging to the class *progressive*. The essays and discussions of the members of this Society have passed into the literature of our profession and become a part of its history. In point of ability they have been by far the ablest and most instructive that have ever emanated from any body of dentists in our country, and will suffer little, if any, in comparison with the essays and discussions of the American Medical Association. Should this Association adjourn *sine die* to-day, and never hold another meeting, sufficient good has already been accomplished by it to fully vindicate the wisdom and foresight of those who first projected it, and have done the most to sustain it.

As we cast our mind's eye over the history of dentistry, and see how in the last forty years, it has risen from a tinkering, catch-penny calling to the dignity of a noble profession, in whose ranks may be found men of high moral and scientific culture, commanding alike the confidence and respect of the educated and refined, we can but attribute much of this progress and pleasing results to the influence of our various local and national associations. All of these associations have their influence for good, and are important, but none is so well calculated, in every respect, to allay that spirit of jealousy and distrust in each other—none so well calculated to strengthen the bond of a common interest and brotherhood, that should bind the profession of the East with the West, the North with that of the South, and make all to feel their mutual dependence upon each other, as a representative National Association. In it are embodied the principles that underlie the structure of our national government, which has demonstrated to the world that for the protection of a community of interests, or for the development of resources, whether material or *mental*, no organization or government is so strong as that based upon the principles of a representative republic.

You are all familiar with the advantages of association and combined labor in the various avocations of life, no matter whether it be in mental or physical labors. You assemble here to-day, as delegates and

members from different parts of our extended land, and in the discussions here elicited you will find new illustrations of the old familiar truths that "knowledge is power," "union is strength," and "in a multitude of counselors there is wisdom." By the contact of mind with mind both will be strengthened, and embryo ideas and theories will be developed into full maturity. "There is a magnetism in such contact, full of creative energy. Flint and steel are passive in themselves, but clash them together and they give out fire, and brightness dazzles upon the sight. The positive and negative poles of a battery never come together without a *result*. By friction of different mental organizations together, an idea is evolved, a new law is discovered, a new creation is added to the wealth of knowledge, and the long-coming rays of a new truth, like those of a far-off star in the laboratory of heaven, reach and illumine the world."

Gentlemen, this Society was organized for a purpose. Its mission is not yet fulfilled. It has a great work yet to do—a destiny to accomplish. The men who were instrumental in its formation were not discouraged because it was so small and unpromising at first. They knew that in the profession it had a strong and vigorous mother to nurse it, and that its growth was certain, but they did not expect it to mature so rapidly. Nor will those who are now engaged in it be so elated by its unexpected success as to allow it to sink under that supine and careless indifference, which so often follows prosperity. Its course will be onward and upward—its motto, Union and Progress.

As the scourge of war passes away from our country, and peace "with healing in her wings returns to bind up a nation's wounds," and those who have hitherto stood arrayed against each other in deadly conflict shall engage in the various pursuits of industrial activity; as that portion of our country which has been laid waste by the desolating hand of war shall be rebuilt, and the millions, North and South, in trust and harmony, shall once more labor to develop the untold treasure of our broad domain, we may look forward to a period of unexampled prosperity in the history of our country.

The rich cotton plantations and rice fields of the South, with the broad prairies and fertile valleys of the North, shall yield an abundant reward to the freeman's hand; the slave-pen and human auction-block shall give place to the church and school-house; with human slavery, the source of all our troubles, forever extinguished from our land, honest pay shall be awarded for honest toil, and we may look for a season of prosperity such as the country has never known.

Wealth, education, and refinement will become more general; and our profession will be called upon to administer to the wants of a higher civilization. As specialists in medicine, to ameliorate suffering and contribute to these wants should be our aim.

To be the better prepared to do this we should divest ourselves of all selfishness and vanity of opinion; and with uncovered heads drink of the fountain of knowledge, from whatever source it may flow. We should measure ourselves with ourselves, not to show that one man is stronger than his fellow, or to pull down those who have been more successful than ourselves, but to give just confidence to the timid, and to strengthen

and raise up the weak. None should be ashamed to learn, or afraid to teach. Freely to give and freely to receive should be our object.

Some of you, before reaching home, will have traveled thousands of miles to attend this meeting. It may be you have come burdened with the rich treasures of experience and skill, to lay them upon the common altar of your profession, for others' good; or it may be you have come to drink from the fountain of thought which others have prepared for you. Here, as ever, he who would freely receive should freely give. And here, too, the "widow's mite" is as acceptable as the rich man's treasure. Whether you have come to give or to receive, gentlemen, as Chairman of the Committee of Arrangements of the American Dental Association, I bid you welcome to the Garden City of the lakes—to the Commercial Metropolis of the Northwest.

Many of you visit to-day, perhaps for the first time, the City of Chicago. As you walk our streets, and see our magnificent and well-filled stores, our palatial residences, our splendid churches, our model schools and colleges, our grain elevators and warehouses—the largest in the world—our shipping, our railroads, branching out in every direction, our magnificent Chamber of Commerce, with its massive and solid proportions, and this artistic and imposing opera building in which we meet; as you look around and see here the largest grain depot on the continent, a city stretching out for miles in every direction, with a population of two hundred thousand souls,—it may not be amiss for me to state that it is not yet thirty years since Chicago was known only as a military post with a few Indian traders, who were supplied with the comforts of life from the East.

The very spot on which we are assembled to-day, in this splendid temple devoted to the fine arts, in the centre of this great commercial emporium, thirty years ago was but a hunting ground covered with prairie grass, through which the Indian pursued his game.

And yet last year our city sent forward to the seacoast and European markets nearly fifty million bushels of grain, enough, if placed in freight cars, to make a train extending almost to the City of Philadelphia. The growth of only a quarter of a century has made Chicago the largest original grain market in the world, not excepting Odessa, the famous grain market on the Black Sea.

From whence comes this prosperity—this rapid growth? It may all be told in one word, and in it is taught us an important lesson—*Enterprise—Enterprise!*

To Chicago, then, as the metropolis of Illinois, and to Illinois, the leading State of the great Northwest, I again bid you welcome. The soil on which you stand to day is too new to boast of ancient or classic memories, yet it is rich in the most sacred and patriotic associations. It is the home of statesmen, heroes and patriots, that have stood forth nobly in defence of the institutions founded by our fathers, and whose fame has gone forth over the whole world.

In the suburbs of our city, on the shore of Lake Michigan, you will stand by the grave of the gifted and patriotic Douglas, whose eloquence once thrilled our halls of legislation, and who, dying just as the greatest rebellion the world has ever known was bursting upon the nation, left

as an inheritance to his children and to his countrymen, a legacy, which, so long as time shall last, shall stand out brightly on the page of history, the immortal words, "Tell them to obey the laws and support the constitution of their country."

And here too, in his quiet Illinois home, engaged in the duties of civil life, was found the great soldier and military leader, whose genius and heroism, after carrying the armies of the Republic through the bloody battles and victories of Donelson, Shiloh, Vicksburg, Chattanooga, Spotsylvania and Richmond, finally won for us an honorable and lasting peace, and made the name of Grant immortal as is the history of his country, and of whom it may be said, as of one of England's great leaders, "he never fought a battle that he did not win, and never encamped before a city that he did not take."

And, finally, in this city, five years ago last month, in a building erected for the purpose, and which is still standing, was placed in nomination for the Presidency, Illinois' honest and cherished son, whose sagacity and statesmanship guided our country safely through the perils of a gigantic rebellion, and whose untimely death left a nation in tears. Millions yet unborn will tread these streets, as they wend their way over the western prairies, on their pilgrimage to the grave of Liberty's noblest martyr, ABRAHAM LINCOLN.

To our State, gentlemen, I again bid you welcome. Welcome to your duties—welcome to your pleasures—welcome to Chicago.

Dr. Abel also welcomed the delegates in a pleasing and complimentary speech.

Dr. McQuillen on the part of the Association replied, thanking the gentlemen for their words of welcome and hoped that nothing might occur to disturb the harmony or interfere with the usefulness of the meeting.

Dr. Spalding, of St. Louis, moved the following resolution which was adopted.

Resolved, That the Physicians and Dentists resident in this city, and also any others who may be here during the sessions of this Association, are hereby invited to be present and to take seats with this body.

The following named gentlemen were elected to their respective positions for the ensuing year:

President, Dr. C. W. Spalding, St. Louis, Mo.

First Vice President, Dr. G. H. Cushing, Chicago, Ill.

Second Vice President, Dr. James McManus, Hartford, Conn.

Corresponding Secretary, Dr. L. D. Shepard, Salem, Mass.

Recording Secretary, Dr. J. Taft, Cincinnati, Ohio.

Treasurer, Dr. J. J. Wetherbee, Boston, Mass.

Drs. Fitch and Cushing accompanied the President elect to the chair. Dr. Spalding returned thanks to the Association, and said that he would discharge the duties of the office to the best of his ability.

Dr. McQuillen then delivered an address. Having been appointed at the last annual meeting "To prepare and present at its next session a full history of the *American Dental Association* from its incipency," he had concluded to embody this in his farewell address. He spoke of the efforts made to establish the "*American Society of Dental Surgeons*,"

and gave a short history of it. It was organized about twenty years ago and consisted of *active* and *honorary* members. The unwarrantable authority being assumed of dictating to members the modes of practice they should pursue (the bone of contention being *amalgam*), the Society dwindled down to *nine* members. He reverted briefly to the American Dental Convention, and spoke at length of the efforts, afterwards crowned with success, which were made to establish the American Dental Association.

Dr. Fitch presented a report on Dental Physiology. He said that Dental Physiology related as much to those forces and functions which preside over the formative and disintegrative processes, as to the specific functions of the teeth after eruption. The nutriment which ministers to foetal life is carried through the arterial currents of the mother, and defective organizations will be produced just in proportion to the deficiency of appropriate vegetable and mineral elements here.

Dr. Atkinson spoke at length upon the subject and referred to the nutrition of the enamel. The dentinal fluid in the interglobular spaces is the food of the enamel, entering at the base of the enamel rods, while the lime salts in solution in the fluids of the mouth, enter at their peripheral ends; hence the propriety of sleeping with the mouth closed.

Dr. McQuillen felt it incumbent upon him to briefly define the marked distinction existing between the mineral, vegetable and animal kingdoms. When carefully examining minerals, vegetables and animals, certain marked characteristics are observable, in which animals and vegetables in certain particulars resemble each other, and differ entirely from minerals. On this account the former are spoken of as organic, from the fact of their possessing organs adapted to the performance of special functions. The mineral kingdom not exhibiting this adaptation of parts to separate functions, are denominated inorganic.

After dwelling upon these distinctions, he said that the teeth, as organic structures, were subject to the law of waste and supply which prevailed in other parts of the economy, and that the liquor sanguinis, or nutrient portion of the blood, only passed into the dentinal tubuli.

Drs. Chase, J. W. Ellis, Richardson, Perkins, of Milwaukie, Perkins, of Albany, Taft, Watt, Nichols, Hill, Buckingham, also gave their views on the subject.

Dr. McQuillen delivered a lecture on the anatomy of Physiology of the eye, illustrating his remarks with models and diagrams. He spoke of the intimate relation of the nerves of the teeth with those of the eye, and to the sympathy existing between them, and also to the affections of the eye, which were most frequently caused by diseased teeth.

Dr. Hildreth, of the Government Eye and Ear Infirmary at Chicago, was introduced to the Association. He gave an interesting description of his mode of operating upon the eye for the cure of various diseases requiring surgical treatment, illustrated with models and diagrams.

Dr. Fitch moved that a vote of thanks be tendered to Dr. Hildreth, for his able and unique lecture, which motion passed unanimously.

Dr. T. L. Buckingham read a paper on the development and reproduction of animal tissue. The main points of the paper were, that

First. All tissues are formed from cells, and these from parent cells; also, that the cells are the active parts of all tissues, the intercellular structure being passive.

Second. Cells invariably produce cells similar to the parent cell, except when new organs are required, and then a new cell, differing from those which produced it is formed.

Third. As new tissue is formed from cells, so, repair or reproduction of tissue is also produced from cells.

Fourth. The cell being the active part of the tissue, all changes, either in health or disease, take place through it.

ITEMS.

Dr. J. D. WHITE has resigned his position as editor of the *Dental Cosmos*. His editorial career has extended over a period of eighteen years. Twelve years were devoted to the *Dental News Letter*, and the remainder to the *Dental Cosmos*—the new series of the *News Letter*. Dr. White's articles were always read with interest; and his practical remarks not only gained him fame and respect throughout the dental world, but did much to increase directly and indirectly the large practice which he enjoys. His monthly editorials will be missed by those who took delight in perusing them, and who gleaned something new each time from them. It is to be hoped that the Doctor will still frequently be heard from. In his farewell announcement he says: "For the profession, who have indulged me in my long career of over eighteen years, I have to thank for their patience and good will. I have received letters of compliment from them, from time to time, that would fill a respectable volume, for the encouragement I have given them; for this I require no reward, and if errors have been made by me, (and who has not?) I have no apology to make, as all that I have done has been 'in earnest and for the general good, and not for self. I leave my tasks with many regrets, as I may not have so close a union with my brethren of a profession I love, as have favored me during my past career; but when I say farewell, it is meant from the bottom of my heart, and let whatever difference may have been between my brethren on professional matters be past forever, and whatever intercourse may take place hereafter be as new things on the face of the earth."

IN 1859 there were twenty-five members present at the meeting of the American Dental Association. In 1860, twenty-three members. In 1861, the war having burst with fury over the land, the meeting was

postponed. In 1862, the members present numbered fourteen. In 1863 there were forty-six members present. In 1864 there were eighty-eight members, and in 1865 the number amounted to one hundred and twenty-four. At the first meeting there were ten local societies and institutions represented, and at the last meeting there were thirty-four.

THE DENTAL COLLEGE SEASON is now approaching. The Dispensaries and Laboratories will be open during the latter part of October, and preliminary lectures delivered daily. The regular course of instruction will begin in November and continue until the close of February.

VARIETIES.

THE approximal surfaces of the teeth can sometimes be effectually cleansed by using corundum tape.

VAST deposits of Silver have been discovered in Lower California which are supposed to be the richest now known.

AN Arkansas Stone, finely pointed, used with powdered emery, will be found efficient in removing light deposits of tartar.

ISINGLASS plaster is excellent to apply to cuts and wounds on the hands. To prevent its washing off, apply a coating of Collodion mixed with Glycerin.

A PATIENT should never be awakened to take medicine; no medicine can be so beneficial as sleep, which is the "Balm of Gilead" of this state of being, and comforts both mind and body beyond any other thing. Sleep is sound, sweet and refreshing, according as the alimentary organs are easy, quiet and clean.

LIQUID SILEX is sometimes used as a substitute for Collodion in Rubber work. Those who have used it say that when care is taken it answers an excellent purpose.

FUMIGATING pastilles are frequently needed. To make them, take powdered gum benzoin, 16 parts; balsam of tolu and powdered sandal wood, of each 4 parts; a light charcoal (Linden), 48 parts; powdered tragacanth and true labdanum of each 1 part; powdered nitre and gum arabic, of each 2 parts; cinnamon water, 12 parts, heat to a smooth ductile mass, form into small cones with a flat tripod base, and dry in the air.

CAMPHOR may be beaten in a mortar for some time, without being reduced to powder, but let it first be broken with a pestle, and then be sprinkled with a few drops of spirits of wine, it may then be readily pulverized. Powdered camphor is much used in tooth powders, fireworks, &c.

A NOVEL blowpipe is thus described in a foreign journal: Hendy's blowpipe is an instrument which combines simplicity and efficiency in a

great degree ; it consists of an ordinary blowpipe nozzle, supplied from an india rubber reservoir. The main portion of the blowpipe is made with a joint, at which a valve is placed, which is opened when the operator blows and closed immediately when he ceases. By this arrangement the little bag or bladder is readily filled at a single breath, and with very little exertion. When so filled a continuous current of air is forced from the nozzle of the pipe by the mere contractive force of the rubber. The force is nearly uniform until the air is nearly exhausted. The current may be easily varied or entirely cut off by gently pressing the fingers upon the neck of the bladder above the nipple to which it is attached. Mr. Hendy has recently made further improvement, by attaching a rubber hose between the mouth piece and the pipe, enabling the blower to change his position without disturbing the direction of the current on the object upon which it is turned.

FATIGUE is for the purpose of warning us when the muscle has experienced so much decomposition as to render it proper to grant repose and time for its repair ; it is therefore a friend whose hints should be regarded. The person who uses stimulating drinks, for the purpose of overcoming fatigue, does overcome the feeling of fatigue, but does not benefit the muscle. If he goes on to labor, he injures the muscle and does not benefit himself, as attacks of rheumatism and the stiffness felt in his declining years will fully prove.

ELECTRICITY will act upon the nerves passing from the organ of taste, and the sensation caused is the same as if a person were tasting something. If it act on the nerve of smell, a sensation of smell is perceived. If it act on the nerve of hearing, a sensation of sound is produced. If it act on the nerve of sight, the sensation of light is produced. If it act upon the other nerves, other sensations will be produced. If a person falling, strike the head violently, the jar acts on several, perhaps all the nerves, so as to produce sensations, differing in case of the different nerves ; thus a person "sees stars," hears a sound, perceives a smell, and through other nerves has sensations of pain, of jarring, &c., produced.

DISEASE of the apparatus forming the tooth is found to exhibit itself most usually in the form of the tooth, which will have a ridgy or wavy appearance ; and a want of proper material would be naturally exhibited in the too great softness of the tooth, or its tendency to crumble. That such a state would frequently be produced, is only what would be expected by the educated person, who sees the mother setting aside the perfect milk, containing all the ingredients to form the teeth and every other part in a proper manner, and feeding her child upon "pap" and like substance, in the composition of which some of the most important ingredients of the teeth are entirely wanting.

PHILADELPHIA DENTAL COLLEGE,

No. 108 NORTH TENTH STREET, ABOVE ARCH.

THIRD ANNUAL SESSION, 1865-6.

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Professor of Chemistry.

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Demonstrator of Operative Dentistry.

WILLIAM P. HENRY, D.D.S.,

Demonstrator of Mechanical Dentistry.

The Dispensary and Laboratory of the College will be opened on the 16th of October, and *preliminary lectures* will be delivered *daily* during the remainder of the month; the lecture on Wednesday of each week, at 3 P.M., to be devoted to clinical teaching.

The regular session of the Institution will commence on the 1st of November, and continue until the close of the ensuing February, during which the Clinics will be held on Saturday, at 3 P.M.

FEES.

Matriculation (paid but once)	\$5.00
Tickets for the Course, including the Demonstrators',	100.00
Diploma,	30.00

For further particulars, address

J. H. McQUILLEN, DEAN,

1112 Arch Street, Philadelphia.

ABRAHAM BELL, Janitor.

THE DENTAL QUARTERLY.

VOL. 4.

PHILADELPHIA, DECEMBER, 1865.

No. 4.

THE NERVE BROACH.

THE eradication of every vestige of disorganized pulp, nerve and attendant blood-vessels, and supplying the space they occupied with a pure material, whether gold, tin, or Hill's stopping, being considered the best practice, as preventative of alveolar abscess, it certainly is of great importance that the instruments which we use in the performance of so delicate an operation should be well made, and made with the above object in view.

A perfect nerve broach, one which will answer the purpose in every respect, is an instrument which the dental instrument maker has not yet succeeded in bringing into the market; at least, it has not been our good fortune to get hold of one. It is either made too stiff, and therefore very highly tempered, snapping off the first time it is used, or else too limber, and therefore too highly annealed, curling up in the pulp cavity when the operator supposes the point to be at the extremity of the fang. However, what we have now, is a great improvement over what was furnished us four or five years since; but still we want a medium between the stiff and the limber—we want something which will not break nor bend when the requisite pressure upon it is made. Of those for sale at the present time, we give the preference to the barbed one. We consider this more effectual in removing the dead matter and in cleansing the canal. Many prefer it with a twisted point, made by flattening the point, and with pliers twisting it two or three times, giving it somewhat the shape of a cork-screw or an auger. Others choose it with the point bent at a right angle. The principal thing, however, to be taken into consideration in the selection, is the tempering; if

that is done well, any of the above shapes will answer a very good purpose.

Small and slender, but a mighty agent in the hands of the expert operator, is this nerve broach, and one which he might well bewail the loss of. Daily do his patients thank him, and indeed have reason to be thankful, for the benefit received and the relief from pain afforded by its use, and it is more particularly our design to direct the reader's attention to its priceless value in this last respect—when relief is afforded almost instantaneously in the first stages of alveolar abscess, through the discharge from the pulp cavity and nerve canal of the pent up accumulation of mephitic gas. It is old but good practice among a few, and is adhered to by those who have successfully tested it.

Entrance to the pulp cavity being clogged up with decayed dentine and decomposed food, and often with amalgam, when inflammation of the lining membrane commences, plastic lymph is effused and mephitic gas evolved. If taken in hand at this stage, the pulp cavity cleansed thoroughly of all filth harbored there, and the fang cleared of all accumulated or disorganized substance, by means of a fine broach, or in case of a non-exposed but devitalized pulp an entrance drilled into the cavity and the same course pursued, in the majority of cases instantaneous relief will be afforded and suppuration either wholly or in a measure prevented. The introduction of creasote, on cotton or saddler's silk, to the extremity of the fang is then advisable; or if preferred, the canal may be syringed with a mixture of creasote and alcohol—a drachm of the former to an ounce of the latter. The return of the mixture into the mouth should be prevented, by sealing the space between the point of the syringe and the walls of the cavity or fang with wax, and also closely guarding with napkins. Since constipation of the bowels almost invariably accompanies this abnormal condition of the pulp cavity and socket, it has been our habit to prescribe either cream of tartar or citrate of magnesia. Of the latter, half a pint bottleful may be taken in two doses at an interval of an hour between each dose.

A lady of middle age called upon us for the relief of toothache in the left superior lateral. Exhibiting no positive symptoms of alveolar abscess, the nerve not being exposed in a cavity formed in the medial surface, it was cleaned out and an application of creasote sealed in. Instruction was then given to the patient to return in case it afforded no relief. About a fortnight after she returned, suffering severe pain in the same tooth. It was a constant throbbing pain; the tooth was sore to the touch and other symptoms of inflammation of the investing membrane were manifest. With a sharp drill an entrance was made into

the pulp cavity. The moment it was opened the peculiar disagreeable odor of the escaping gas, made known the state of the case. The pulp cavity and canal were thoroughly cleansed, and syringed with tepid water, and then wiped dry. Creasote on cotton was then pressed up into the fang and the patient dismissed, relieved of all pain.

In another instance, the tooth, the left superior front incisor, had been filled over an almost exposed nerve about six years previously—the nerve having probably died from the effects of the heat and cold transmitted through the gold filling. The patient, a young lady, was suffering with the premonitory symptoms of alveolar abscess, having been troubled with that condition about a month prior to this time. The filling was removed and an opening made into the pulp cavity, which was cleansed out and a fine broach passed to the apex of the fang; syringed with tepid water, dried out and an application of creasote on cotton made as in the case above mentioned. The same result favored us—an almost instantaneous relief from pain.

To more forcibly impress upon the minds of those who do not pursue this practice, its advantages, utility and efficiency, and if possible to persuade them in future to pursue it for the sake of suffering humanity, if not for their own, we will mention another case much more difficult to treat, on the patient's account, and itself a more stubborn one than either of the foregoing. The patient was a young Miss, very timid and very nervous; her nerves, to use the language of her physician, being in "a horrible condition!" Such cases are not met with in the practice of every one. In order to be successful the "patience of Job" must be called forth; coaxing, threatening, &c., in many instances being of no avail. This patient had no doubt many times suffered all the pangs of an exposed and inflamed nerve in this very tooth rather than have an application in the cavity, or the nerve destroyed. It had, however, given up the ghost, with no thanks to the skill of the dentist. The tooth was the right superior first molar. There had been alveolar abscess two or three times in as many months; each time the face was swollen, and in the region of the eye, it was blackened. In the course of half an hour we were enabled to remove all foreign matter, and cleanse out the cavity. A fine nerve broach was passed up into the palatine fang of the tooth, and afterwards syringed out. A pledget of cotton moistened in creasote was placed in the canal, and sealed in with wax, and the tooth left to decay away. It has now been several months, and the tooth has not given any further trouble, nor do we apprehend that it will, unless the pledget of cotton and creasote should drop out and the pulp cavity again become clogged up.

A. T.

ESSAY READ BEFORE THE IOWA STATE DENTAL ASSOCIATION.

BY G. W. NICHOLS, DAVENPORT, IOWA.

GENTLEMEN:—Having been appointed at the last regular meeting of our society as an essayist for this occasion—no doubt more in the spirit of encouragement, than otherwise, I chose for my subject “Mechanical Dentistry,”—not that I propose to teach my Dental brethren anything in regard to that, which, if they are Dentists, they must be already practically acquainted with, the various *methods* of mechanical substitution; or, that I would arrogate to myself the knowledge of certain principles, which, though they may not have occurred to many, are certainly open to all—but I thought I would take advantage of my appointment, to give expression to a few general observations and reflections which have presented themselves from time to time. First, I have observed a deep, wide spread, and I fear, a growing tendency to sacrifice anything in the shape of a natural tooth that presents itself for *replacement*. This arises, no doubt, in the first place, from a too general lack of knowledge on the part of the patronizing public, causing them often to sadly under-estimate the truly great value of their own natural organs of mastication, and altogether *over-estimate* the comparative comfort and use of artificial ones. This renders them careless and inattentive to the decay of their teeth, and backward about expending a few dollars upon their preservation. It is common for the Dentist to have good teeth presented for extraction—teeth, that with a little care might yet be made to serve a lifetime—and be told, as he expostulates with his patient, endeavoring to have him or her see the matter in its true light—that “no, those teeth shall never trouble me any more, take them out, or I will get some one else to,” and out they come. What wonder, then, this same patient is imbued with the idea that a full artificial set can be had at about the price of a pair of boots; having no adequate conception, and often, even, never having heard anything in regard to those great functions of the animal economy—Mastication and Digestion.

Besides this, there are, I am pained to say, many practitioners in this profession, Dentists in name, but charlatans, swindlers and thieves in practice, who foster this ignorance on the part of their patients—men, or shapes of men, who, having learned, or picked up somewhere the way—not the Art, for few have mastered that, but *the way*, to stick bits of baked Porcelain on an uncouth plate, having no skill, and lacking every requisite necessary to the composition of a Dentist—thinking of

nothing beyond dollars, and caring for nothing beyond self. Devils in human form, for I can call them nothing less—that go about from place to place (for few locations are peopled with such midnight ignorance as to sustain them for any length of time) seeking whom they may devour. Stuffing unprepared cavities with mercurial paste; removing tartar with quicklime and aquafortis, and wherever an opportunity can be found, or forced, removing teeth promiscuously and inserting in their stead, those patent, inimitable, compound, and double prominent \$13 sets. Now this is all wrong. In the first place, every scholar in our common schools, ought to be early and particularly instructed in regard to the vital importance of the dental apparatus; its liability to decay; and the care and watchfulness necessary to its preservation. They should also, be shown something in regard to the difficulties and capabilities of Dental practice, that they may not only be led to a just appreciation of timely consultation of Dental skill, but that they may also have within themselves a criterion established, by which they can discriminate between the man of professional ability and the mere vender of quack nostrums and mere impudence.

On the other hand, a Dentist should be compelled to obtain by actual knowledge, and known capacity, either the diploma of a Dental faculty, or a legal certificate, signed by not less than three long experienced and well known dentists. On these, as a foundation, could be reared a superstructure of living prices and real excellence. And then, having established the foundations of Mechanical Dentistry, in the patronage of an enlightened and appreciative public, and in the services of intelligent, competent and honorable operators, we should find that the only indication for artificial substitution was where, all conditions and circumstances considered, the *actual benefit* of such procedure outweighed *every other* consideration. Here we may extract with a clear conscience, and firm hand, furnishing our patron with the best substitute that our ingenuity can devise.

This brings me to another part of my subject, that partially owing to the present peculiar construction of block teeth, whose rigid arch admits of but little adjustment, and partially from a lack of care, taste, or a feeling of inadequate remuneration, nine-tenths of, at least, the cheaper class of dental substitutes are but miserable abortions. Teeth, they are, to be sure, they could not well be less. The operator is furnished them by the manufacturer; but what selection, and what arrangement! Look at the dental arch. How is it imitated? Instead of a wedge like form, terminating in a short curve, we frequently see glaring upon us from the harmless mouths of many a poor victim, horrible semi-circles

of white porcelain, reminding us more of the idol teeth of savage barbarians, than the scientific structure of professional men. Let this thing end, let us have a greater variety of curves in blocks, and a *great deal more care* on the part of those who use them.

Let the Dental aspirant for professional perfectability go to the mouths of his patients where all the teeth remain, and see how nature builds her arch, as to color, size, and last, though not the least of all, expression. Here a great many of our best operators have fallen into an egregious error. They assume that artificial teeth should be set upon the plate with perfect regularity, for if Nature had a chance to do her best, that is the way she would set them. Were this a true assumption, yet we know that nature has not the chance to do her best, she finds something continually to thwart and interfere with her designs, and if we hope to attain to her peculiar harmonizing of the contour and texture of the face, with the substance and arrangement of the teeth, we must study *her as she is*. If we do this, if we set teeth as she sets them, seldom, if ever regular, with this cusp in and that cusp out, this central true with the arch, and that slightly turned, this tooth this way, and that the other, *turned in the mouth* until the effect is right, we shall soon hear less of that "crowning horror"—false teeth. The contrast between the face and teeth will be lessened, and all join together as harmonious parts of one expressive whole. It is here, as elsewhere, that "the proper study of mankind is man." He that notes nature closely will not be likely to place the pearls of blooming sixteen in the sallow face of eighty; nor, try to hoop the jaw with a round strap of teeth, but rather with a wholesome and large consideration, adopt that course which his enlightened observation, best judgment, and the *highest interest of his patient*, sanctions.—*Dental Register*.

ACQUIREMENTS FOR ADMISSION INTO THE DENTAL PROFESSION.

BY A. BERRY, D. D. S.

[Read before the Cincinnati Dental Association, Aug. 24, 1865.]

THAT a knowledge of anatomy, physiology, pathology, dental therapeutics, chemistry, the theory and practice of operative and mechanical dentistry, is a necessary qualification for the practice of dentistry is too apparent to be denied.

So much does the health and comfort of the patient depend on dental operations being properly performed, that they should never be attempted by the ignorant.

The necessity for thorough preparatory study for the practice of medicine has always been recognized by the medical profession, and by all enlightened communities. From the days of Hippocrates to the present, the doors of the profession have been jealously watched to exclude the uninstructed. In the older states of our country, legal safeguards were early thrown around the practice of the healing art. In New York, half a century ago, the aspirants to it must study with a reputable physician four years, and be examined and licensed by a legally appointed board of medical men, before he could assume the responsibilities of the profession. At that early period, owing to the financial embarrassments of the country, the expense of attending the few medical schools was quite onerous.

It has been the opprobrium of the dental profession from its earliest history, that in its ranks were many charlatans, there being no criterion by which the public could distinguish them from well educated and honorable members. The veriest ignoramus, with *quantum sufficit* of assurance, had only to say "I am a dentist," and he was a dentist.

Until of comparatively recent date, there being no schools for instruction in dental science, the qualifications for practice were only to be acquired under great difficulties with private preceptors, on whom an immense task was imposed to prepare their students, even in a superficial manner, for the duties of their profession. Although private dental tuition is not to be dispensed with, it cannot afford all the necessary advantages.

But, fortunately for our country, the means of obtaining a thorough dental education have been ample for the last quarter of a century. Our dental colleges afford, in this respect, all that could be desired, and at small expense. So there is no longer an excuse for any one attempting to enter the profession without being thoroughly instructed in its principles and practice.

In my humble opinion, it is important that measures be adopted to prevent all not duly and truly prepared from assuming the responsibilities of dentists. The community should be protected against dental empirics by legal enactments. Let the dental societies all over our country resolve, that in future no young applicant shall be received by them as a member, or recognized as belonging to the dental profession, unless he is a graduate of a dental college. The possession of a diploma from such an institution by a young man is *prima facie* evidence that he has enjoyed facilities for acquiring a good dental education, which he has improved in a creditable manner, while want of it is good ground for the suspicion that he is a quack.

Instead of such a course being ungenerous toward those desirous of entering the profession, it would be an act of the greatest kindness to them, as well as the public, being promotive of the best interests of all parties concerned.—*Dental Register*.

IMPORTANCE OF THE PRESERVATION OF THE TEMPORARY TEETH AND SIX-YEAR MOLARS.

BY WM. A. BREEN, D. D. S.

If there be any part of our specialty of more importance than another, it certainly is in the attention given to the deciduous or temporary teeth. Many suppose that inasmuch as the temporary teeth are intended to subserve the wants of the body only for a short time, and are then to be succeeded by a stronger and better set, it is of little consequence whether they remain until they are removed by the operation of the economy, to give place to others, or are lost a year or two earlier; but this is a great mistake, and it is one that has been productive of much mischief. If the morbid state of the gums and teeth of the little sufferer arise from some constitutional derangement, let it be pointed out to the parent or guardian of the patient the necessity of administering the proper remedial agents, for the purpose of restoring these parts to their normal condition; if it be from local derangement, the attention of the parent or guardian of the patient should be called to the necessity of having the child's teeth kept free from the particles of food and other extraneous matter that lodge between the teeth and along the gums, and which, if permitted to remain, soon undergo chemical decomposition, and become a source of irritation to the latter; vitiating the secretions of the mouth, and rendering them prejudicial to the health of the former.

The temporary teeth, from these causes, are often soon involved in extensive caries, subjecting the little sufferer to the most torturing pain, and depriving it of the first set, long before the time of the appearance of the second has arrived.

Some teeth are more susceptible to the action of chemical agents than others, and consequently more liable to disease.

Teeth of a hard and firm texture are not easily affected, but those that are soft and chalky are readily acted upon by the fluids of the mouth, when in an impure and vitiated condition; and the greatest care and attention are necessary to preserve them, even for the short period their presence is required.

If, then, the parent desires to see his child possessed of a good set of permanent teeth, he will observe the instructions of his dentist, which should be, that the child, from the time it is old enough to use a tooth

brush, should use a soft brush at least once a day, for the purpose of freeing the approximal surfaces and their surroundings of all accumulations of impure or vitiated matter, which is so often the cause of caries in those parts; besides this, the parent can be instructed to send his child to the dentist at least once in three months, for the purpose of having the teeth examined, and counteracting by timely removing such causes as may produce disease, but if these timely precautions are not taken advantage of, often it is too late, and from local, the disease becomes general; and when the patient can no longer withstand the excruciating pain, night or day, the parent brings the child to the dentist.

He diagnoses the case; he finds caries have been reigning supreme; they have become deeply seated, decomposition has been suffered to go on uncontrolled, inflammation of the lining membrane has set in, it has conveyed its ravages to the periosteum, to the alveolar dental membrane, suppuration has set in, and finally exfoliation of the alveolar process.

A case of this class came under my notice for treatment sometime ago; the patient being a little girl. I removed the sequestrum with the tooth remaining attached, and after washing the parts out with a syringe, using dilute tincture of myrrh, in two sittings healthy granulations formed; and the child had no more trouble. I asked why this child had not been brought sooner. The mother said she had a physician to the child. Finally, at the eleventh hour, he concluded it was a case for the dentist. The disease was located in the left superior molar. The age of the child was between five and six years. Caries of the temporary teeth may be arrested, if the patient is sent to the dentist in time, by proper treatment, which consists in removing the disease and filling the cavities with gold; if they are subsequently kept clean, this treatment will often preserve them until the economy has thrown them off; if the case comes too late, and the time for the eruption of the permanent near, even then, unless the patient is suffering unbearable pain, the tooth should not be removed.

If the lining membrane becomes involved, treat the same as in a permanent tooth, that is the bulbous cavity; and fill with Hill's stopping. The roots of the deciduous teeth should not be filled, as the foramin is constantly enlarging from absorption. If trouble should ensue from the filling, it is easy to remove it; and by cleansing and syringing it out, and by means of soothing palliatives, it may still be borne with, and the patient in after years will not regret the protracted stay of his temporary teeth.

About the age of five or six years, the first molar makes its appearance above the gum, a sign that the shedding of the temporary teeth is about to commence; indeed, under favorable conditions, they will then begin to drop out, at various times, as their roots become absorbed.

As it would occupy too much of your valuable time at present, to narrate the different periods of eruption, I will confine my subject to the six-year molars.

The first molars are so frequently mistaken for a portion of the temporary set, and such unhappy consequences result from this error that those having the care of children should be particularly directed to this point.

These teeth are sometimes permitted to go to decay from want of care, and under the impression that they are the temporary teeth, and only following their proper course; sometimes they are extracted for some slight cause, when the whole arch becomes imperfectly developed, and the most painful and tedious cases of irregularity are often the result.

A case of this kind was presented to me only a few days ago, by a parent requesting me to remove the six-year molar. It was the left inferior. I told the father the tooth should not be removed, but it should be thoroughly prepared and filled, and it would perhaps last for many years. The patient was a boy eight years old; it was a case of simple caries. I spoke to the father of the injurious effects it would have upon the arch to remove the tooth before the other teeth had made their appearance. The tooth was filled, and by that means saved.

OPENING OF A NEW DENTAL DEPOT IN NEW YORK CITY.

ON the evening of Friday, November 17th, we had the pleasure of attending the formal opening of the dental depot of J. G. Ambler, Jr., son of the well-known practitioner of that name, at his salesrooms, 823 Broadway, New York. It was our good fortune, also, to meet there many of our celebrated brethren of the metropolis, who responded very generally to the card of invitation.

The name of Ambler is so closely allied with the progress of dental surgery, and with the improvements in porcelain teeth and artificial dentures, that we are satisfied that a brief report of the interesting proceedings on the occasion will be acceptable and pleasing to our many readers. There are many members of the dental profession who are indebted for their first insight into the mysteries of dentistry to that noted and venerable practitioner, D. C. Ambler, M. D., and they all, to a man, regard him with feelings of the highest respect. He practiced for many years in the city of New York, but of late years has made his home in Florida. He is well known throughout the South, where he counts his friends in the profession by the tens and hundreds—indeed, we doubt if there is a dentist living who has as many personal friends in the profession as Dr. D. C. Ambler. On the present occasion he was recognized and greeted by many who knew him well.

Cotemporarily with our well known friend, S. Stockton, of Philadelphia, as far back as 1830, in New York, he manufactured artificial teeth, experimenting by day and by night in mixing and burning, in gumming and enameling, and in endeavoring to bring to perfection a semblance of the natural organs. The first premium ever awarded in this country (and, we have reason to think, in the world,) for porcelain teeth, was by the American Institute of New York, to Dr. D. C. Ambler. We have seen several specimens made at that time by him, and by his nephew, J. G. Ambler, M. D., who was his pupil, and successor in New York city, which, even at this time, might be considered by some as creditable productions.

Having studied the mechanical part of the business, our young friend J. G. Ambler, Jr., brings with him to his new calling the experience, as it were, of two generations in the manufacture of porcelain teeth. He proposes, however, furnishing those who may favor him with their patronage, with the teeth manufactured by Johnson & Lund, and to devote his time and attention more especially to the selection of the proper shades and sizes, as needed by dentists, and to seeing that all orders for teeth, instruments, and other articles in use by the profession, are filled with care and despatch.

In one of the rooms there was a table spread with an ample supply of the "good things of this life," which the assembly, on invitation, did justice to. Our old familiar friend, A. Jones, of New York, who, for the last thirty years, has catered to the wants of the profession, was introduced by Dr. Ambler as one who had done more than any other man to bring about a friendly intercourse among dentists. Through him, they were introduced to each other, and many hungry seekers after dental knowledge have reason to thank him for placing them in the position to have such hunger appeased—by introducing them to city dentists of practice and position. Mr. Jones, being a man of action, and not of speech-making proclivities, merely bowed to his friends, and retired.

Dr. Wm. H. Atkinson was then introduced. In a lengthy speech, in his peculiar style, he urged upon dentists the propriety and necessity of encouraging and sustaining all efforts which are made for their benefit and convenience. He dilated upon the niggardly policy of getting cheap things, and advised the members of the profession, if they would excel themselves, to encourage the manufacturers of teeth, instruments, &c., to do likewise. He advised them to buy the best articles, and to pay a liberal price for them, and thus give a stimulus to continued efforts in improving the various articles in use by the profession.

Dr. John Allen was then introduced, as one who had done more to improve artificial dentures than any other member of the profession. Dr. Allen, in responding, expressed his pleasure at seeing members of our profession taking a deeper interest in dental depots; I think it may be the means of improving some of the manufactured articles used in dental practice. Our gold beaters, for instance, are not practising dentists, and consequently, unless advised by dentists, not competent to determine just what properties are required in gold foil to make the best fillings. The same may be said of our teeth manufacturers. They do not seem to attach sufficient importance to the great variety of shades, tones and forms which are required to meet the great variety of cases that occur in the artificial branch of the profession. The price of artificial teeth is of little consequence compared with their quality and life-like appearance. I would rather pay one dollar apiece for teeth that will exactly meet the requirements of my cases, than one cent apiece for such as are not true to nature. And I know, there are many in our profession who are ambitious to do the *best* work, not the *cheapest*, and all this class of dentists will cheerfully pay for any extra skill or expense that may be required to produce the most natural appearing and best teeth.

Dr. Tees, of Philadelphia, being called upon, said that he was pleased to meet so many celebrated practitioners of this great city on an occasion like this. It was obvious from the results obtained, in the life-like artificial teeth presented to the profession, that the manufacturers had profited by the suggestions of dentists in regard to shape, color, &c. They have also been compelled to employ mechanical dentists of experience, in originating designs for blocks, gum and plain teeth, &c., thus showing their dependence upon the dental profession for the successful prosecution of their business. There is, indeed, a mutual dependency existing between the manufacturer and vender and the dentist, and in view of this, each should do all in his power to aid the other. Many of our dental journals have been started and supported by tooth manufacturers, and the good influence these have exerted upon the profession none can deny. Through the journals, societies have been formed—through the societies, dental colleges have sprung into existence, and out of their halls have come forth educated dental surgeons, to be scattered throughout the land. He wished success to the proprietor of the depot, and hoped the members of the profession would liberally encourage him.

Dr. F. H. Clark recounted what was still requisite in the shape of block teeth. A more beautiful and natural curve should be given them.

He had found it difficult to impress upon manufacturers what was wanted. They would listen patiently to suggestions, but would seldom follow them out. He could, of course, have blocks carved to meet his requirements, but this occasioned too much delay.

Various matters were then discussed by Drs. Hawes, Clay, and others, until a late hour. It was proposed to have the Dental Society meet in these rooms. Mr. Ambler expressed his willingness to comply with the wishes of the Society.

PROCEEDINGS OF THE ELEVENTH ANNUAL SESSION OF THE AMERICAN DENTAL CONVENTION.

THE eleventh annual session of this association commenced on Tuesday, August 1, at White Sulphur Springs, Ohio. None of the officers being present, the meeting was called to order at 11 o'clock, A. M., by Dr. William H. Atkinson, and a temporary organization effected, Dr. H. E. Peebles of St. Louis being elected President, and Dr. H. A. Smith of Cincinnati, Secretary, pro tem.

By request of the President, Dr. Taft read the constitution of the Convention. An assessment of one dollar per member was then laid, and the gentlemen present paid the same, and signed the constitution. The committee on the Kingsley medal was called; Dr. Atkinson, the only member present, said the committee had no report that he was aware of; did not know that anything had been done in the matter.

On motion of Dr. Taft, the sessions of the Convention were ordered to be from 9 to 12.30 A. M., and from 2.30 to 5.30 P. M.

AFTERNOON SESSION.

The Convention came to order at half-past two. Dr. Taft read a letter on "Dental Education," by Dr. S. J. Cobb. Was received, and ordered to be filed. Nothing having been done by the committee appointed to prepare a Dental Catechism for publication in school books, Dr. Kelsey favored a discharge of the committee. Dr. Atkinson considered the school book just the right medium through which to impart primary instruction in the care of the teeth. Dr. Dunn expressed his disappointment that the committee had taken no action. Dr. Buckingham thought our real need was a concise work on Dental Hygiene. The Committee on Dental Catechism was then discharged.

Dr. Buckingham offered the following, which was adopted:

Resolved, That this Convention, recognizing the importance of preparing a proper treatise on Dental Hygiene for the use of the public, recommend the performance of this work to the members of the profession.

The subject of Dental Education was then taken up for discussion.

Dr. Taft thought many of us do not sufficiently appreciate the importance of thorough education in our specialty. The highest aim of the medical practitioner, whatever his specialty, should be to preserve

the human system at its highest point of development. He hoped no young man would enter the profession without being equipped with every agency of success.

Dr. Benedict, of Detroit, stated that the Michigan State Dental Society had petitioned their Legislature to add dental professorships to other chairs of the State University.

Drs. Atkinson, Buckingham, and White, also made a few remarks upon the subject.

The Report of the Treasurer was now presented, showing the balance in the treasury. It was referred to an auditing committee, who declared the same correct.

SECOND DAY'S PROCEEDINGS.

MORNING SESSION.

The Vice President, Dr. Bishop, having arrived, took the chair.

Dr. Peebles, President pro tem., in taking leave of the chair, made reference to his efforts in St. Louis, to effect an organization of dentists. This was the first of its kind west of the Alleghanies, from which numerous others had sprung. Did not believe in multiplying dental colleges, but preferred seeing those in existence well supported. He prized highly a state of sociability among professional brethren; they enjoyed this in a high degree in St. Louis. He wished the counsel and assistance of his brethren on one occasion, and sent to six of them a card, bearing on it, "Come now," and almost as soon as his messenger returned they were all in his office—some of them leaving patients in their chairs.

The election of officers for the current year resulted as follows :

President, Dr. H. E. Peebles, St. Louis, Mo.

Vice President, Dr. H. F. Bishop, Wooster, Mass.

Recording Secretary, Dr. H. A. Smith, Cincinnati, Ohio.

Corresponding Secretary, Dr. L. Buffet, Cleveland, Ohio.

Treasurer, Dr. H. Benedict, Detroit, Michigan.

The subject of Dental Education was again taken up.

Dr. Smith, of Cincinnati, adverted to the necessity of preliminary training before entering any college.

Dr. Buckingham said that the fact was, that men were engaged as dentists, three generations of whom were turned out in as many months. He had known of an old practitioner bringing one of his students to a dental depot to buy him a vulcanizer. This student shortly returned with his student, and the second with a third, and all turned out full fledged dentists in three months, to fleece different communities.

Dr. Horne offered a resolution that this Convention adjourn on Thursday noon, to meet in the city of New York, on the first Tuesday of August, 1866. Carried.

Dr. H. A. Smith read a paper on the "Correlation of Forces." He believed that one force could be converted into another, the theory being that all are one and the same.

Dr. Buckingham said that he had read all the works on "Correlation of Forces" which had been published, and sketched the main points of difference. Newton's theory was, that heat was a substance, but it

is now believed that it is a motion, and in the condition of heat, the first atom, being set in motion, gives an impetus to the next, and so on. This is the manner in which nerves convey impressions to the brain.

Dr. Smith mentioned bark as a poor conductor of heat, and useful for capping.

Dr. Atkinson mentioned his manner of saturating the dentine with creasote previous to plugging; also, of protecting a nearly exposed pulp by a layer of Hill's stopping, covered with a gold cap and held in position by bone filling.

Dr. Buffet objected to the use of creasote for obtunding an exposed pulp, as he found it would effectually destroy it with a single application.

AFTERNOON SESSION.

The Convention was called to order at half past two.

The Convention took up for discussion the subject of Operative Dentistry.

Dr. Taft found the field of Operative Dentistry to be a large one, because so many views and practices obtain; every case has its own difficulties on account of peculiar condition, saliva, position, smallness of mouth, &c. The treatment of pulps must be of as infinite variety as the cases themselves. A great deal of the success of an operation depended upon the compatibility of the patient. He came in contact occasionally with patients for whom he would not attempt to operate. He preferred to have all the circumstances as easy as possible.

Dr. Morrison narrated a case where, having extracted a bicuspid tooth, he filled it, and after a lapse of three hours replaced it in the socket, and it was worn for three days. At the end of that time there was some soreness, and at the request of the patient's physician, he removed the tooth, being of the opinion, from its appearance, that a healthy reunion would finally be effected.

Dr. Peebles' practice was to remove the pulp in the front teeth without any arsenious or other appliance.

Dr. Smith referred to Dr. Allport's method of cutting away, with a delicate instrument, a portion of the pulp, leaving flaps to come together and heal by first intention. This he thought only applicable if there was a part of the pulp diseased, or some excrescence which it was desirable to cut off.

Dr. Cahoon thought that Dr. Allport's practice might answer if such cases did not occur oftener than once a year.

Dr. Morrison exhibited one of Dr. G. E. Hawes' duct compressors, with an improvement in the catch.

The committee on the Kingsley medal were granted further time to report.

THIRD DAY'S PROCEEDINGS.

MORNING SESSION.

On motion of Dr. Horne, seconded by Dr. Buckingham, the following resolutions were adopted:

Resolved, That this Convention urge upon the members of the dental profession the importance of subscribing for one or more of the

dental journals, as the means of conveying valuable information and suggestion in the progress of our specialty.

Resolved, That we renew our testimony in favor of a high standard of professional skill and scientific attainments, and commend to all dental practitioners that their students be required to undergo a thorough course of reading and instruction, preparatory to such collegiate education as may entitle them to the diploma of some one of our dental colleges.

Resolved, That this Convention, recognizing in the formation of dental societies in different parts of the country, the brightest and most hopeful sign for the future of our profession, desire that their benign influence may be extended to every village in the land.

Resolved, That we pledge ourselves, individually, to use every means in our power to attend the next annual meeting, and to induce our brethren to do so.

Dr. Corydon Palmer, of Warren, Ohio, presented to the Convention a pair of instruments adapted to either side of the mouth, for holding the napkin in place, and compressing the sublingual ducts. Dr. Palmer also described an instrument of his, wedge shaped, well tempered, for cutting the roots of front teeth free from their attachments, in order to facilitate extraction. In preparing a stump for pivoting, he filled the nerve canal with gold, and then the larger cavity with Wood's metal, and, at a subsequent sitting, drilled into that and inserted the pivot.

Dr. Morrison used the beak forceps for extracting roots, with which he was generally successful.

The subject of Artificial Appliances was then taken up for discussion.

Dr. Buckingham exhibited specimens of rubber, of various colors and compositions, prepared by Professor Wildman, of the Pennsylvania Dental College; also, two sets of teeth, one on a base of pure rubber and sulphur, the other being a preparation closely resembling the Company's rubber.

Dr. Atkinson, by request, exhibited a number of beautiful preparations of sections of human teeth, which were seen through a powerful microscope.

The artificial palate of Dr. Kingsley employed the attention of the Convention for some time, various inquiries and statements being made by different members.

AFTERNOON SESSION.

On motion, a vote of thanks was passed to A. J. Wilson, Jr., Esq., for his courtesy to the members of the Convention, during their stay at White Sulphur Springs.

No other business being presented, the Convention adjourned, to meet in the city of New York, on the first Tuesday in August, 1866.—*Condensed Report from Dental Cosmos.*

THE Medical Colleges of Philadelphia have larger classes this season than at any session for some time past. The class at the Pennsylvania numbers about five hundred, and that of the Jefferson about four hundred, nearly every State in the Union being represented. The Medical Department of the University is now in its one hundredth session.

PROFESSOR MORTON'S LECTURE.

Notwithstanding the unfavorable state of the weather last evening, a large audience assembled at the Academy of Music to hear and witness Professor Morton's lecture on "Shadows." The lecture was designed to illustrate and demonstrate a few fundamental truths in the science of optics, viz.: the directions of the path of a ray or wave of light, its inability to bend or go around any opaque body in its path, the diverging paths of rays proceeding from a luminous body, and the fact that rays of light may cross and intersect each other in every imaginable way without obstructing each other.

These principles seem dry enough when stated in this way, and yet the demonstration of them by Professor Morton was in the highest degree interesting, instructing and entertaining. The illustrations were effected mainly by shadows thrown on an enormous screen covering the whole cross section of the stage at the Academy, the shadows being produced by objects and figures passed in front of an electric light and a lime light in a camera. By these means shadows were shortened and elongated, narrowed and broadened, enlarged and diminished at the pleasure of the lecturer. At one time we had a most elegant illustration of the mode by which the moon is eclipsed, by being immersed in the earth's shadow.

There was an artificial sun, the earth moving through the air over the stage, with a deep shadow projected behind it, and the moon at one moment highly illuminated by the light from the artificial sun, and the next, becoming totally eclipsed by dipping into the earth's shadow. A more perfect and elegant illustration of the phenomena of eclipses of the moon can scarcely be conceived. Then we had a demonstration of the manner in which the fearful spectre of the Hartz mountains in Germany is produced.

Again, shadows of living figures were thrown upon the screen, in which the audience were shown a pugilistic combat between a pigmy and a giant, and while the fight proceeded, the pigmy would swell to gigantic proportions, while the giant diminished to a pigmy. Presently, an enormous shadow of a human hand would grasp both and carry them off. Again, similar shadows would appear, and while being presented in various fantastic attitudes, a monstrous shadow of a human head would appear, and, opening its enormous jaws, gobble them up. Then, the figures increased to the full height of the stage, would appear to fill the whole space in front of the audience, approaching the auditorium itself, and finally, with a stride that defies description, would step up through the roof of the Academy, and disappear. Space, and the lateness of the hour, forbid further description. The peculiarity of Professor Morton's lectures consists in their perfect clearness, and in the novel, beautiful and striking character of the illustrations. There is nothing hackneyed about them.—*Philadelphia Ledger*.

VARIETIES.

DR. HENRY'S method of getting rid of the surplus rubber, is by means of a hollow screw, inserted in the top of the flask. When the case is

packed and pressed together, the surplus rubber in a soft state will ooze out, and thus prevent imperfect articulation and cracking of blocks, necessarily thin. It is a simple and effectual plan, and prevents much waste of rubber.

AN arithmetician, with a great deal of leisure time, has undertaken to calculate the length and weight of the national debt in silver, and he makes it encircle the earth four times, requiring one hundred and twenty-five ships of a thousand tons to carry it.

"WHAT is this tooth powder that is spoken of in the Boston newspapers, my love?" said a dulcinea to her John, in one of the back settlements. "Oh, nothing," said John; "its only a sort of powder, with which the doctors blow up teeth, as we do rocks, when they can't get them out any other way."

ON a cottage window, near Plymouth, is the following:—"I ———, Parish Clark, Sargeant Smith, tacheth young Garls and Buoys to rade and right, daletth in mole candles, shugar plums, rishlites, comes, mole traps, spring guns, and all other sich matters—*teeth distracted*, blid drawn, blisters, pills, mixtures made, also, nails, and horses shoed, hepsome salts, corns cut, and all things on rasonable Tarmes. N. B.—and also my Misses goes out as man whidwife in the cheapest way possible."

THE following is the *New York Ledger's* estimate of the qualifications requisite to make a dentist:—"A young man with a fair English education could no doubt become a good dentist, if he had the other necessary qualifications. A quick, good eye, a sure and steady hand, and that natural gift which enables a man to become skillful in the mechanic arts, are essential qualities in the formation of a first-class dentist. In addition to these, the profession of dentistry affords ample scope for the exercise of the higher powers, and use for stores of information concerning physiology, anatomy, and everything else appertaining unto the formation of the nature of human beings."

DR. BARNUM'S rubber dam is found to be very convenient, and to answer the purpose admirably in most cases. It consists of a piece of thin sheet rubber, about two inches square, with a hole punctured in the middle. This is stretched over the tooth, and the edges, by means of an excavator, pressed between the gum and the neck of the tooth. The cases in which it fails to answer the purpose are principally in cavities on the approximal and buccal surfaces.

It is hardly possible to conceive of any instrument producing more wonderful results than the microscope, which, by enabling us to see better, develops the extraordinary powers that are possessed by the human eye for adding to the facts which constitute the basis of those general laws which are the sciences of natural history and physiology. The observation of minute forms of life has led to a more correct and satisfactory knowledge of the nature and forms of higher and more visible creations; and the views of disease, which are modifying the practice of medicine every day, are mainly owing to the formation of more correct theories of disease, under the influence of the microscope.

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PIVOT TEETH.

THE insertion of a pivot tooth upon the healthy fang of a superior incisor or cuspid, is almost always advisable. It approximates very closely to the natural organ in appearance, is much more comfortable and life-like than a substitute upon a plate—and it gives in every way, when the operation is properly performed, much better satisfaction. Even when a root is very much decayed, if the margin is firm and the cavity shaped so as to retain a Wood's metal, or a well washed amalgam filling, a pivot hole can be drilled into, and a crown nicely grafted thereupon.

Unfortunately, artificial teeth manufacturers seem to pay but little attention to replenishing their stock of pivot teeth. Those they have on hand have an antiquated look in shapes and shades; they are not arranged in sets, and hence when two or more teeth are to be grafted upon crowns, in order to perform a neat operation, the dentist is compelled to call in the aid of the block carver. In fact, with the present supply this is his only resort, unless he chooses to use rubber or plate teeth, and mount in the various ways in vogue at present, and since it is not always convenient to employ, and sometimes impossible to engage the services of such a person, it is, therefore, desirable to be well acquainted with every mode of manipulating, more especially with those where plain rubber teeth are used.

Before proceeding to the consideration of these several methods, we will briefly describe the most approved way of preparing for and inserting a carved pivot tooth. In grafting a crown upon a root, in order to guard against alveolar abscess, about half the length of the nerve canal from the apex of the fang, should be filled with gold, placing a small pledget of cotton moistened in creasote, at the extreme point. This will prevent the accumulation of acrid matter, and the formation of mephitic gas with its direful effects. The root is then drilled in the usual manner, and a piece of silver wire of the required length and thickness of the pivot is placed

in the nerve canal. An impression of the root is then taken, including that of several of the adjoining teeth. If the wire is not withdrawn with the wax but remains in the root, it is to be removed and placed carefully in its position in the wax. The impression is then soaped or oiled, and fine plaster of paris run into it, care being taken to guard against air bubbles. After it hardens and is removed from the wax, it should be varnished in the usual manner; it is then ready, with the sample of color, for the block carver. The silver pivot will guide him in giving the hole in the crown the proper direction. Being moulded to the plaster cast of the root, it should be, if properly made, a perfect fit, which we sometimes are prone to think unattainable with a pivot tooth selected at a dental depot.

Teeth for the rubber base, or rubber teeth as they are commonly called, are the pride of our tooth manufacturers, to the perfecting of which their time, attention and money is much more devoted than to any of the other styles, on account of the much greater demand for them. Every variety of color and shape can readily be obtained, whether single teeth or in sets of two, four, or six. For this reason, every dentist should be perfectly familiar with the various ways of turning them into pivot teeth, or of making them answer the purpose. Experts in the use of Wood's metal, are in the habit of grafting these teeth upon fangs, by fusing the metal in the root to that attached to the crown. It is an operation very tedious alike to the operator and patient, requiring the greatest amount of patience, care, and skill, and often consuming several hours in the performance. It must be perfectly done, since it is of the utmost importance that there be no crevices to permit of the lodgment of minute portions of food, else it will be in nowise superior to an ill-fitting pivot tooth.

The entrance to the canal is enlarged toward the palatine surface, and several grooves cut to retain the filling. This cavity is then filled to the edge with Wood's metal, the pieces being well fused together so that when finished they will form a solid mass. The rubber tooth is then fitted, and retained in position with wax on the palatine surface; plaster of paris is then spread on the labial surface of it and the adjoining teeth. After it hardens the wax is removed, and the metal is fused around the pins, against the back of the tooth, and united firmly and perfectly to that in the root. It is then shaped so as to conform to the palatine surface of the adjoining or corresponding tooth. It is then scraped, filed, stoned and burnished, after which the plaster of paris is removed.

Another method is to cut by means of a tap, a thread on the walls of the canal, after it is drilled the requisite size. A screw is cut on a piece of silver or gold wire of the proper length, by means of a screw-plate, and is screwed into the root. The rubber tooth is then fitted and waxed on,

and plaster of paris spread as before on the labial surface. The metal is then fused closely around the pivot and the pins, and built out to match the natural tooth. It is then finished as in the first instance.

The method of procedure of another plan, is as follows: A rubber tooth is selected and fitted to the root. A piece of gold wire of the desired length, somewhat thinner than the hole in the fang, is placed in the canal. The part to be imbedded in the crown, has a screw cut on it by means of a file or screw-plate; softened wax is then moulded around it and against the root, in order to get a perfect impression of the latter, and to retain the tooth in position. When the wax is cooled sufficiently by syringing cold water upon it, it is gently removed together with the tooth and pivot. The tooth, the pivot, and the impression of the root, are then imbedded in plaster of paris, after oiling the wax. After the investment has hardened, the wax is removed, and Wood's metal is fused around the pins and wire, and finished off to resemble the natural tooth adjoining. The wire should be as small as is consistent with strength. A hole is then drilled in a piece of pivot wood by means of a drill, a size smaller than the gold pivot. The latter is forced into this, and the wood trimmed off and compressed through a hole of the right size in a pivot draw plate. It is then pressed gently to its place in the canal of the fang. This method we think preferable to either of the others, since the manipulation is easier, and the operation not so tiresome to the patient and operator, and upon the whole, success will be far more certain.

Should Wood's metal not be at hand, Lawrence's, Haywood's, or Townsend's amalgam, well washed both in salt water and alcohol, may be substituted, but the fusible metal, we think, is to be preferred. A. T.

ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

A MEETING of the Society was held on Monday evening, February 5th, Dr. Harris in the chair. The subject for the evening was "The advantages and disadvantages of filling teeth with exposed nerves."

Dr. Kingsbury described at length his manner of procedure in such cases. He devitalized the pulp by means of a nerve paste of creasote, acetate of morphia and arsenious acid. He used a very small amount for each individual case, and never allowed the application to remain in for over twenty-four hours. Considered the application so apt to produce dangerous results, that if he placed it in on a Saturday, as was frequently the case, he enjoined upon his patients the necessity of calling on the Sabbath to have it removed. Thought it his duty to be exceedingly careful in the use of it. He had seen many cases of evil effects from carelessness in its use, and cautioned young practitioners of the dangers. Some of

them applied to the pulp ten times the quantity required; a very small amount is requisite. He filled the fangs with gold, placing a small piece of cotton and creasote in the extreme point of the fang, and had been very successful in saving teeth which otherwise would have been sacrificed.

Dr. Flagg had been very successful in fang filling. During his practice he had treated a great many teeth, and had had but six or seven cases return to him with any symptoms of alveolar abscesses; they may have not been all, but that was about all that he had any knowledge of. Applied the paste, but was not at all particular how long it remained in. Would not, upon any consideration, break the Sabbath to remove an application; others might consider it their duty to do so, but he did not. Sometimes it remained in a week or a month, or even six months; and there are gentlemen in this room now who have had the application in their teeth for weeks. He tried to save all manner of teeth and roots, and but seldom extracted; still he did extract—sometimes found it necessary. Used anæsthetics, and thought they were a blessing. Regarded nitrous oxide as the best, and always said so, but thought there were cases where it could not be used. He filled the nerve canal with cotton, moistened in creasote and oil of cloves, condensing well, and soaking up the surplus. Considered this better than filling with gold, because it is more easily removed in case of any future trouble. Sometimes filled nine-tenths of a cavity with os-artificial or Hill's stopping, or tin foil, and then finished off with gold. Advised his patients in case a tooth treated in this way gave trouble, to call upon him immediately. He then removed the filling, took the cotton out of the fangs, and then let the tooth alone. After that it would cure itself. Some persisted in ramming cotton and creasote into every fang, and poking a syringe into every fistulous opening, but he did not. He removed the cause, and then he let it alone. He had had many cases of alveolar abscess sent to him by other dentists, and he cured them in that way. He experienced a great deal of trouble in removing gold fang-fillings, and on that account considered the cotton the best.

Dr. McQuillen spoke at length upon the advantages of the interchange of ideas. There was no person, however ignorant, from whom he could not learn something, and there was no journal, however badly conducted, but what he could always glean something from it. He favored the filling of fangs with gold, and considered it better than cotton on account of its greater density. Preferred gold as a filling for teeth. It was a source of pleasure to him, after the lapse of years, to see fillings looking well, whether placed in by himself or others. With his friend Dr. Atkinson, he looked upon the introduction of anæsthetics as almost a curse, on account of the wholesale extraction of teeth which could be saved, and made

to subserve the purposes of mastication. A person not a dentist, who exhibited nitrous oxide, had made a boast to him that he cleared fifty thousand dollars a year. He had an establishment in New York and one in Philadelphia, and proposed opening others in other cities. He deprecated the practice of dentists sending their patients to those who were not dentists, and had thought of referring to it editorially.

Dr. Ellis pursued the same practice as Dr. Flagg. He did not think twenty-four hours a sufficient length of time to destroy a pulp. He considered that it only benumbed it, since it gave indications in many instances of still being alive. He treated it until it could be removed, without forcing a broach up, and twisting it in the apex of the fang. Frequently the broaches broke off there. He believed in certain cases that it required several days to destroy a nerve, and often renewed the application. Was not particular at the first application of cleaning out the cavity, since he was always careful not to give pain. He never put in temporary fillings; when a tooth was prepared, he filled, and did so with no intention of removing it; but since there was a possibility of alveolar abscess, he believed the cotton filling was the best, since it could be very easily removed. He thought it would be well to extirpate the pulps of front teeth at once, and devitalize the back ones by means of arsenious acid.

Dr. Garretson thought there was two sides to the question of treating alveolar abscess. He hoped that those present would not be carried away with the eloquence of his friend Dr. Flagg. He wished to speak from a surgical stand-point. The treatment of alveolar abscess depended a great deal upon the condition of the system. While Dr. Flagg ridiculed the practice of ramming cotton and medicines in the nerve canal, and introducing the point of a syringe into a fistulous opening, this was just the practice Dr. Garretson advocated in very many cases, and did not believe they would get well by letting them alone. If the finger of a healthy person be cut, a simple dressing is all that would be necessary, but if syphilitic virus pervades the system it would be necessary to pursue other treatment. So with alveolar abscess, its treatment should be governed by circumstances.

Dr. Breen always endeavored to save teeth, and did not extract unless absolutely necessary. He destroyed the nerve, filled the fang, and had been very successful in this treatment.

Dr. Tees filled the fang in such a manner as to permit of easy removal in case of alveolar abscess at any future time. He used fine gold wire, with a screw-thread cut upon one point by means of a file; around this a small piece of raw cotton was wound, and moistened in creasote. This was pressed up to the apex of the fang. The end of the wire he allowed to

remain in the cavity in the crown. The entrance to the canal was then enlarged, and filled with gold or Hill's stopping. In case of alveolar abscess at any future time, the filling can be removed and the wire pulled out with the tweezers. During the past year or two he had treated several cases of exposed pulp where it was not or had not been inflamed, and so far had been successful, but it was uncertain whether treatment be attended with the same success after the lapse of several years. Had seen them after they had been filled a year, and they presented every appearance of containing living pulps. He placed a small piece of cotton, moistened in creasote, upon the exposed pulp, and filled over it with os-artificial. This substance will gradually wash away, but considered it the only filling that could be used. With these exceptions in case of exposed pulp, he devitalizes and fills the fangs in the manner described.

Dr. Bonwill, of Delaware, pursued the ordinary course of devitalizing pulps, and filling the roots with gold. Did not work with a view of ever removing the filling; did not anticipate alveolar abscess when teeth were thoroughly treated in this way. He sometimes placed in a temporary filling of gutta percha, and allowed it to remain in six months or a year, and then refilled with gold. He had extirpated nerves by means of the galvanic battery. Destroyed nerves by means of arsenious acid. Was very careful to remove all foreign matter, and sometimes took as much pains as in preparing the tooth for filling.

Dr. Stellwagen was sorry that more had not been said upon the practice of capping nerves; but one member had referred to it during the evening; would like to have heard from other gentlemen upon the subject. He had seen very miserable fillings put in by two of the distinguished operators of this city, and since he had been Demonstrator of the Philadelphia College did not believe such work had gone out of the clinic-room. In these instances the pulp-cavities were not filled, and alveolar abscess was the result. He would say that neither of the dentists were in this room, nor did they belong to this Society.

Dr. Harris said he had not been in practice for a few years past, and therefore would not pretend to advance anything upon the subject. He enjoined upon those present charity for the operation of fellow practitioners. Amalgam was introduced into this country many years ago by two French dentists. Dr. Elisha Townsend was opposed to its use, and warned the public against having their teeth filled with it. Before he died he advocated its use, and now there is a cement which bears his name. He spoke of the advantages enjoyed by the students present in listening to the discussions of experienced operators, and advised them to avail themselves of the privilege at every opportunity.

PHYSIOLOGY AMONG DENTISTS.

BY GEO. WATT.

ACCORDING to its derivation, physiology includes in its teachings the functions and properties of all natural objects. As at present used, however, its meaning is much more restricted. We speak of physiology as the science which teaches the functions of the various organs of animals and vegetables in their normal or healthy condition.

When there is a departure from the normal state, the degree of departure, its nature, cause and remedy, form a basis for another science, commonly called *pathology*. As this term is generally used, one might properly define pathology to be the *physiology of disease*. A knowledge of pathology presupposes a familiar acquaintance with physiology. For, if the mind is not familiar with the healthy condition, how is it to recognize departures from it? And an acquaintance with either, or both of these, implies the previous study of anatomy; for the organs themselves must be known before much can be known of their functions. Anatomy is pertinently called the basis or foundation of medical science. With the same propriety, physiology may be regarded as the second stratum.

If physiology be strictly confined to a consideration of healthy functions, we are not likely to find such a thing as *human* physiology. Man is a fallen being. During all the generations of his existence he has violated the laws of his physical being—the laws of health. As a consequence, no perfectly healthy human constitution can be found. Hence, if the rigid definition be adhered to, human physiology is nothing short of pathology. But this rigidity of definition is found to be inconvenient in practice, and it is common to speak of the *physiological* condition of organs which perform their functions in accordance with the ordinary state of human health. This indefiniteness has its inconveniences, for it is impossible to tell the exact point where physiology ends and pathology begins. But all generous minds will submit to the inconvenience rather than be obliged, under all circumstances, to regard man as diseased.

If, then, all departures from the healthy state are but changes from a physiological to a pathological condition, it follows that the two sciences which take cognizance of these conditions and changes, are practically the most important to the medical man, whether he be a general practitioner or a specialist. Can anything be more absurd than for a man to prescribe for a morbid condition which he does not comprehend? Can anything be more ridiculous than a man's labors to restore an organ to health while he is ignorant of what is the normal function of the organ? Yet, absurd and ridiculous as they are, such efforts are far too common. My opportunities for observing the practice, both of physicians and dentists, have been quite extensive, and I am convinced that a great majority of their failures and shortcomings result from the want of clear views in physiology and pathology.

The neglect of physiology by the profession seems to be intentional. In the college curriculum it is usually placed as a caudal appendage to a chair already overcharged. John Jones, "Professor of Anatomy and Physiology," ordinarily implies that, so far as the consideration of the latter by the said Jones is concerned, it is profession only. My observation, extend-

ing to a number of colleges, gives me the impression that from a chair of anatomy and physiology, all the attention, or nearly all that the latter receives, is an occasional remark, parenthetically introduced, during the lectures on anatomy. In our dental schools the chairs expected (?) to impart physiological instruction are variously styled "Dental Science and Mechanism and Physiology," "Anatomy and Physiology," "Anatomy, Physiology and Hygiene." Now, from such an arrangement, no sensible man would expect the science of physiology to receive the attention to which its great importance entitles it.

But this apparently studied neglect of physiology by our profession may raise the inquiry with the young dentist, and especially with the dental student, whether, after all, the science is really so important. Let us consider this.

To argue that those who operate on living organs should be familiar with the laws governing the life principle of these organs, ought to be regarded as supererogatory. But being well convinced that but few in our profession appreciate the importance of a knowledge of physiological principles, I incline to offer a few illustrations:

When the attention of a dentist is called to a pale, delicate babe, suffering the ordinary agonies of first dentition, unless he is familiar with the physiology of the nervous system and of the mucous membranes, unless he is able, with a good degree of accuracy, to estimate the life power of the little sufferer, his diagnosis, treatment and prognosis are but guess-work. Unless he can read the symptoms and manifestations of the case as he would read a book, he has no right to prescribe or operate, and if he does so, he is guilty of an outrage on an immortal soul.

Or, if the patient is a delicate lady, anticipating maternity, what an outrage for a man, ignorant of the laws of life, to trifle with the destinies of two immortals!

And even if the patient be a God-forsaken, man-despised, loathsome, rotten, syphilitic carcass, he has a right to expect that the man who assumes to be a member of our profession has made such scientific attainments as will enable him to form a correct diagnosis of the case, and to adapt appropriate treatment, if the case be still amenable to treatment. In this, and in all the cases referred to, unless the mind has a clear conception of the normal state of the organs involved, the nature and extent of the departures from it cannot be understood. But it is unnecessary to specify further. In every diseased condition that can arise, the man competent to take charge of it is he, and he alone, who is familiar with the organs involved, and their functions in health and disease.

Reference has been made already to the ordinary position of physiology in the *curricula* of our colleges. The question naturally arises, whether or not this apparently studied neglect of the science shows its legitimate results on the profession? Let facts bear witness.

In former days, when each member of the profession was to a great extent isolated, this question could not be settled by observation. But now, when association and a free exchange of ideas prevail, and especially when we have a great delegated body, representing the earnest, progressive portion of the profession, its solution is easy.

I am well aware that many first-class dentists have never been delegates

to or members of the American Dental Association, but I feel that I am warranted in claiming that in its membership are as good dentists, and a greater proportion of good dentists, than can be gotten together by any other process. It may be profitable, then, to notice the state of physiological science in this society.

It is not proposed in this connection to say anything about the report of the Committee on Dental Physiology. That is a fair representation of the attainments of the committee, or at least of its chairman. The discussions on the subject of this report afford the best index of the physiological standing of the profession at large. But it is not intended to notice these at length, or in order. Let it suffice to notice a fact or two occurring in connection with the late meeting in Chicago.

At that meeting was a member whose constitution had been shattered by a great proportion of the acute diseases to which a man is ordinarily liable, as, for example, fifteen attacks of pleurisy, nine of pneumonia, more than twenty each of cholera morbus, intermittent and remittent fever, twelve of dysentery, three of bilious colic, to say nothing of cholera, inflammation of the brain, erysipelas, and dozens of other diseases too tedious to mention. At the time of the meeting, this member had been suffering with articular and muscular rheumatism, accompanied with cold, clammy night-sweats for more than a year, and was then laboring under an attack of fever, which had prostrated him a part of each day for a week previous. His pulse was over ninety, and his respirations over thirty to the minute during every day of the meeting. The fever under which he was laboring then confined him to bed, with sufferings beyond the descriptive powers of the most vivid imagination, for eight weeks, leaving him helpless from *paraplegia*. And yet, by professors, editors, prominent writers and debaters, was this member congratulated on his restoration to complete health, was referred to in more than one speech as a specimen of perfect health! Because he lacked, and always had lacked, breath to burn out the excess of carbon from his system, and hence was corpulent, and because his cheeks were reddened with fever, his was uniformly spoken of as a perfect constitution, though there was not a drop of healthy blood in him. A genuine physiologist, seeing but one of his eyes through an auger-hole, would have recognized that pathology and not physiology had cognizance of the case.

Let another fact in this connection suffice; while drawing illustrations from comparative physiology, a prominent and talented member told us of queen bees being reared from the larvæ of drones, simply by a change of diet; and, though it would be as reasonable to tell of a young mountain bull, with his enormous development of head and horns, turning to a beautiful Durham cow from the effects of a red clover diet, yet no one corrected him. A physiologist can appreciate the fact that an improved diet may develop genital organs that would lie dormant under a less generous regimen, but that the *sex* can be changed by a variation of food is new to him.

Those who recognize and appreciate the above, and similar facts, I think will agree with me, that, as a profession, we have, to a considerable extent, neglected and ignored the science of physiology. This can be accounted for in several ways. Dentists are a part of the public, and the public mind is, as yet, far from educated as to the wants and requirements of the pro-

fession, and hence the dental student starts wrong. Most persons regard the mounting of artificial teeth on a gold plate as the highest attainment of dental skill. But once or twice in my life have I heard a young man recommended as a suitable candidate for the dental profession on any other principle than that he was a mechanical genius. It is not stated by his friends who introduce him that he has a good mind, a good education, and is studious; but that he is "a great hand for tools, is always tinkering, will make an excellent mechanic," &c.

The student begins his course with similar ideas, and is impatient of every hour spent in study instead of manipulation. Such are the ideas of students, and when pupilage has ended, and professional life has taken its place, it is found that only an enlightened and progressive few have got beyond such notions. And while a great majority enter the profession in this way and with these views, it is not remarkable that there is a failure to make due provision for this study, either in the office instruction or the college course.

There is no such thing as standing still in professional science. The man who tries to remain stationary goes backward. And the same is true of the man who neglects to cultivate any science, special or collateral, pertaining to his profession. But the young practitioner is tempted to neglect the sciences on which his profession is founded, when he finds them so little appreciated by his patrons. When, by his knowledge of physiology, pathology and therapeutics, he is able to restore a diseased mouth to health; when, by skillful treatment, a set of teeth, loose, and ready to drop out, are rendered firm and healthy, and, for charging a reasonable fee for his services he is regarded as a swindler, while his neighbor, who mutilates the mouth and removes the teeth and substitutes an artificial monstrosity, is regarded as a man of the most wonderful science and skill, and is cheerfully and liberally paid, it is not surprising that he learns to think more about manipulations than science.

It would be easy to assign other reasons for the neglect of physiological science by our profession, but there is danger that this article will become too long.

If such is the neglect, and such are the reasons for it, the *methodus medendi* ought to be easy. The way to reform is, simply, to forsake sin. But, in regard to the matter under consideration, it is quite probable that many—a majority perhaps—are unconscious of their sin, and therefore they are not to be blamed too severely, as, like St. Paul with his persecutions, they do it "ignorantly, in unbelief." But on those who are already enlightened, a great duty devolves—a duty no less than the illumination of the rest of the profession. "Let your light so shine before men that they, seeing your good works, may glorify your Father who is in heaven," by doing similar good works, making our profession an unmingled blessing to our fellow-men. The candles must not be put under bushels, but on candlesticks. Those already alive to the importance of this subject must endeavor to render it prominent in all prominent places—in the office pupilage, in the journals, in the college course; and, more important than all, perhaps, popular information must be disseminated, till no community will support, or even tolerate a dentist who is ignorant of this and kindred fundamental sciences.

It will be necessary for some to get too much in earnest (?) in order to bring others to the proper position. This is in accordance with the true philosophy of reform. A crooked stick is more readily straightened by forcing it beyond a right line. People are led more readily than they are driven, and the leader must go beyond the goal in order to bring his followers up to it.

With reference to the college curriculum, it would be easy to give physiology a more prominent place than it occupies at present. I once listened to a course of lectures, the chair being entitled "General Pathology and Therapeutics." The professor regarded it as impracticable to lecture with profit on pathology without a preliminary course on physiology. As the professor of "Anatomy and Physiology" was still cogitating among the dry bones, he gave us a short course on physiology himself. And, that the lectures were good, it is proof sufficient to state that they were delivered by the lamented J. B. Smith. Never did I hear lectures before or since with so much profit; and, from that day to this, I have felt that any college course which does not include a chair of *physiology and pathology* is defective.

But the signs are favorable. I never before saw so much earnestness in our profession on the subject of physiology as at the Chicago meeting. Though the discussions were somewhat wild, yet their earnestness promises good results. And if these remarks give additional impulse to the good cause, the object is gained for which they are written.—*Dental Cosmos*.

TREATMENT OF THE ANTRUM.

Read before the Pennsylvania Association of Dental Surgeons.

BY J. D. WHITE, M.D., D.D.S.

MR. PRESIDENT AND GENTLEMEN:—By request I appear before you, after a lapse of years, to read a short essay; this I do with the greatest of pleasure. I select the above subject, the treatment of the antrum, because it is a kind of, and, indeed, is truly a line which marks the division between dentistry proper and general surgery. It is on this ground that the dentist and surgeon will meet, and from this stand-point be better able to comprehend each other's *specialties* more clearly, perhaps, than any other in the whole round of diseases to which the human subject is liable. Writers on the diseases of the antrum complicate it at once with malignant diseases; humors of various kinds, differing from that which concerns the dentist, so that he, the dentist, in attempting to study them, is carried away into the abstruse field of surgical science, which is entirely beyond the range of his specialty. It is no matter how much a dentist knows of disease in general, but it should be made clear where his duties stop, so that there could be no equivocation on the part of any one whether he is occupying his true field of labor or not. By reference to a few cases this point can be made plain.

Case 1. A few years since a neighboring dentist called to see me to ascertain whether I would see a patient for him, who was suffering with his teeth; the three superior molars. I found the gum and the cheek considerably swollen, patient about fifty-five years of age, and instead of

the teeth being the cause of the trouble, it was a disease of the jaw which had involved the teeth. The disease was of a fibro-cartilaginous character, and of a malignant type. I told the dentist and the patient that it would be necessary to remove the whole of the superior maxillary, but believed it was too late. The operation of removing the jaw was performed by the late and distinguished Mütter, but the patient died in about six months. If this dentist had been sensible of his proper field of duty, he would have sent the case at once to a surgeon; the patient lost his life, prematurely, by the ignorance and mistaken duty of this dentist. The dentist supposed it was a case of disease of the antrum, complicated with the disease of the teeth.

Case 2. A young man was sent to me, a few weeks since, by a distinguished surgeon of our city, whom he had been treating for some months for ulceration of the membranes of the right nostril, from which there was a fetid discharge; his teeth were all sound, I mean free from decay, but one, the second molar, was somewhat loose; this tooth I extracted. (The tooth is here shown.) It is entirely sound, except that the partition root is diseased from ulceration and necrosis of the floor of the antrum, which was the result of tertiary syphilis. After extracting the tooth, the patient was sent back to his surgeon, as I had no more to do with it than if it had been a case of gout.

These cases are given to show, that had they come into my hands at first, I would have sent them to a surgeon for treatment; the first one to get the jaw removed before it was too late, and the second case to go under systematic treatment, such as only belongs to the surgeon and not to the dentist, although, in both cases, there was disease of the antrum and jaws. The dentist is auxiliary to the surgeon in such cases. It is too much the practice of the dentist, in my opinion, to enlarge the importance of his duties and his profession, by retaining cases of disease of the antrum and the jaws that in no way belong to him, or his sphere of duties, much to the detriment of the patients. I may ask here, then, does the treatment of the antrum even come under the province of the dentist's duties? I answer yes. The citation of a case or two will illustrate.

Case 1. A gentleman, about fifty years of age, called to consult me, in November, 1862, complaining of a fetid discharge from the left nostril and the throat. He had been treated for a long time for ulceration of the throat and posterior nares, without any apparent relief. He fancied he had ulceration of the throat, and as no relief had been obtained by treatment, he feared he had disease of the lungs; the pus trickling from the posterior nares into the throat, and exciting cough, caused him to discharge pus, which he supposed came from the lungs, and which preyed so much on his mind that his general health was much impaired. I found the left superior second molar dead, and had been for many years, but it had never been a cause of pain. I could detect no disease of the lungs or ulceration of the fauces or throat, and if such had been the case it would not have been fetid, especially that peculiar kind that characterizes disease of the antrum, which is analogous to rotten eggs. There was no soreness along the base of the antrum, no looseness of the dead tooth, but there was some fullness of the canine fossa of the affected side, a little infiltration into the cellular tissue of that side of the face; symptoms which are always present

in disease of the antrum, and taking in connection with a fetid discharge from the nostril, are unmistakable signs of the disease of that cavity. This patient had been under many physicians, but no one was willing to believe he had diseased antrum. I extracted the dead tooth, and found that from the anterior buccal root the floor of the antrum was open; upon injecting tepid water through the antrum into the nostril, a great quantity of matter and flocculi were discharged. If I find that simply keeping the parts clean does not, in a short time, ameliorate the symptoms, I use the chloride of zinc, ranging from two to twenty grains, sometimes nitrate of silver, from two to ten grains. The patient was placed on good diet, the orifice from which the tooth was extracted kept open with a tent of cotton, the cavity syringed out twice a day for a short time, then, as the symptoms improved, only once a day, and at last once in two days. The orifice was allowed to contract as the symptoms improved, until the water passed out of the nostril clean and the fetor disappeared. The tent of cotton was left out, the walls of the orifice leading to the antrum touched with nitrate of silver, and the parts healed up finely. The case lasted four months in treatment.

Case 2. The same patient was attacked, in the fall of 1863, with disease of the antrum, of the opposite side, from a dead tooth which was not decayed, but had become dead from some unknown cause. The tooth was drilled, to test its vitality, before extracting; only a fetid discharge from the right nostril, and fullness of the canine fossa of that side, led to the diagnosis. In two months the case was cured by similar treatment to the first case.

Case 3. A lady, about forty years of age, called to consult me, October 4, 1865, complaining of a fetid discharge from the right nostril, and sometimes from the throat, some pain all over that side of the face, fullness in canine fossa, some tenderness on pressure, and slight redness of that cheek. I found that the first superior molar was dead, and had been for a long time; there was no soreness of the tooth, no sensibility on percussion. I extracted the tooth, but could find no opening to the antrum. I sent the patient home to return in a few days, because some cases of the kind have become sound spontaneously, with nothing more than the removal of the dead tooth. The patient returned on the 10th of the month. I found the floor of the antrum open. I passed a current of tepid water through the antrum into the nostril, disengaging a large amount of pus and flocculi, very fetid. It is not often that pus is found in the cavity of the antrum after a tooth is extracted, especially after a few days; it is only vesicated mucus, similar to that secreted from the Schneiderian membrane of the nostril during a severe catarrh. It is best to test the contents of the cavity by pouring it into a tumbler half-full of water; the pus will sink and the mucus float, and strong stimulants should be avoided when pus is not found there. After the first day, I used a weak solution of the chloride of zinc. I saw the patient every day for awhile; when the symptoms improved, every other day, at last every three days, and discharged the patient, cured, November 27. I used a tent of cotton, passed into the cavity, to prevent the too rapid closure of the socket from which the tooth had been extracted. I am in the habit of letting it close as fast as I see the case is improving, so that when the lining membrane of the antrum has regained its normal character, that the orifice will speedily close, and the case is cured. The

more rapidly those cases can be cured up the better, as an antrum is not in a normal state with its floor perforated, and the sooner it can be closed the less liability there is for the establishment of other forms of disease, and as the lining membrane of this cavity is delicate, and liable to many forms of disease, it is unsafe to tamper with it. I might remark here that some surgeons are in the habit of introducing a leaden plug, with a flattened head, to prevent it from being, by accident, forced into the antrum. I do not approve of it in a simple case of *alveolar-antral abscess*. If the case is for protracted treatment of malignant disease it is another matter. I know of a case, and often see it, where a leaden slug has been worn, by the advice of a surgeon, since the 17th of September, 1860, and the case is worse now than when the treatment commenced, and a few weeks since one of the turbinated bones of that side of the nares became dislodged, and on the patient lying down it fell back into his throat; and another case, where the leaden plug was worn for three years, the inner walls of the cavity were much thickened, and the orifice of the floor of the antrum would not heal up. After what has been said it will doubtless be seen that where an antrum is only affected by alveolar-antral abscess, it can be left to the dentist to manage, but where the cavity is involved in consequence of systemic diathesis, or malignant local disease, it is not a part of his profession, but it is here where the intelligent dentist and surgeon will or may often meet to the mutual advantage of each other, as well as the suffering patient.—*Dental Times*.

DENTAL EDUCATION.

By J. H. McQUILLEN, M.D., D.D.S., Professor of Anatomy, Physiology, and Hygiene in the Philadelphia Dental College. Read before the Merrimack Valley Dental Association, and published by request of the Society.

Mr. President and Gentlemen:—I was quite surprised to find in a printed notice, received a few days since, that I was expected to be present at the meeting of the MERRIMACK VALLEY DENTAL ASSOCIATION to be held at CONCORD, on the 2d of November, and although nothing could afford me greater pleasure than to be with you on that occasion, I regret to say that professional and collegiate duties of the most engrossing nature preclude the possibility of my leaving home at this time. Under these circumstances, I have concluded to forward to you, as a substitute for my presence, a communication on DENTAL EDUCATION. The subject is suggested to my mind by the fact that the period has again arrived for the opening of the dental colleges, and if, as has been reiterated on different occasions in our magazines, dental education is tending downward rather than upward, it becomes a matter of grave moment to the student who has at heart his own best interests and those of the profession of which he desires to become an honored member, that he should be exceedingly careful in selecting the source whence he shall derive his professional education. In other words, that he should institute a rigid personal examination of the facilities afforded by such institution or institutions as he may have the opportunity of visiting, and thus determine for himself, unbiased by prejudice and uninfluenced by the opinions of others, where he will be the most

likely to obtain the greatest amount of knowledge and be the best prepared to serve his fellow-man.

The course indicated, which would be appropriate at any time, is peculiarly advisable at a period when such an assertion as that referred to above is made, and it becomes a matter of some moment to determine whether it has a foundation in fact. Not only is this a matter of vital importance to those just entering upon their studies, but to the profession generally it is also of immense moment, for anything which tends to lower the standard of education must exert a prejudicial influence upon the character and position of the profession in the estimation of the world.

As one who has long felt a deep interest in the subject, and has made it an object of careful study for years, and as a student, a practitioner, and a teacher has had a somewhat extended and varied experience, I feel that it requires no labored argument to prove the reverse of the position, *viz.*, that dental education is tending *upward* rather than *downward*, and that, living as we are in an eminently progressive age, the march of dental science is by no means falling behind, but, on the contrary, maintains a pace equal to if not in advance of other departments of science. And in the active operations of the *past* as in the *present*, whether in the transactions of associations or as contributors to the literature of the profession, the teachers in our collegiate institutions have performed no insignificant part in aiding this progress.

Owing to the small number of students heretofore in attendance at the colleges, the influence of the faculties in this direction on dental education has been exceedingly limited, but the efforts of individual members in the magazines and in the associations have been powerful incentives to young and progressive minds to become more thoroughly acquainted with the science and art of the profession. And in this way a large class of minds have been reached who have never entered the portals of any institution.

That dental education is not yet what it should be, or what its ardent devotees hope it will be, is undoubtedly true. It is still in an infantile and immature condition, but it is gradually and steadily developing its powers and resources. Like individuals and nations, it must have its origin, growth, and maintenance, its trials and difficulties. It does not, *Minerva* like, spring into full vigor and perfection from the brain of the heathen god. Its beginning must be in the microscopic germ, and the feeble bantling needs much careful nursing, let its after-growth be what it may. Its origin is gradual, its growth tardy, often almost imperceptible, and yet, nevertheless, advancing. What it is, it has become by slow degrees, by hard labor, by the indomitable zeal, devotion, and constant self-sacrifice of men who, having its best interests at heart, willingly dismiss for the time mere mercenary considerations.

When one reflects upon the history of our country from the Colonial period down to the present time, and recalls the constant struggles for liberty and the maintenance of political existence, it is rather a matter of felicitation, that in spite of all those chilling, and apparently blighting influences, knowledge in all directions should be so generally diffused among our people, and one cannot but entertain a feeling of respect and gratitude for those wise and far-seeing men, the pilgrim fathers of New England, who, at the earliest period, and long before the savage had been tamed, the

forest felled, or the fields cultivated, established seats of learning, and these begetting others, until at last our favored land rivals the old country, not only in the number but in the character and reputation of some of its institutions.

Thus is it with the dental profession; while still in its infancy and its members only numbering a few thousands, colleges have been established, not merely to meet the wants of the *present*, but also to supply the demands of the *future*. What influence they shall exercise remains to be seen, but as the *present* may be justly said to foreshadow and mould the *future*, it is reasonable to infer that they will be able to sustain a fair comparison with time-honored institutions devoted to other departments of science.

As this great country advances, as it is destined to do, from a population of *thirty*, to *five hundred millions of souls*, year after year these institutions, if properly managed, will be sought after as indispensable means of education by the large number of dental students who now, as it was formerly with the medical students, receive a limited and necessarily defective instruction from preceptors in private offices.

In England, France, and Germany, the most learned and scientific nations of Europe, it has taken ages to develop and mature the general plan of instruction, and the facilities afforded by their educational institutions, and again, existing as these do under the shadow of monarchical forms of government, any innovation upon old established routine, and particularly any attempts to establish a new order of things, is not only looked upon with doubt and jealousy, but, as a general thing, most violently opposed; as a consequence of this, little or no effort has been made in the Old World, except in England, toward the founding of institutions devoted to teaching the principles and practice of dentistry, and dental students from Europe, of necessity are compelled to seek our colleges for that theoretical and practical knowledge which has given to American dentistry its world-wide and justly merited reputation.

I have said that dental education is tending upward rather than downward; the evidence in support of that conclusion is as follows: When the dental institutions first came into existence, the members of the faculties very naturally not only lacked *experience* as teachers, but many of them were in other respects poorly fitted for that responsible position. Well do I remember the feeling of distrust with which, ten years ago—after having declined in preceding years the position—I entered upon the discharge of such duties, deeply conscious of my own deficiencies, and fully recognizing those of my colleagues.

Years have rolled by since that, and with these have come—it is trusted to all (along with new schools)—experience, enlarged attainments, and increased capabilities for imparting knowledge. Again, when I recall the entire absence at that time of anything like materials for illustrating the lectures in the various departments (and which are as indispensable to the *teacher* as they are to the *student*), and contrast the ample and valuable collections now presented, one cannot but be impressed with the fact, that the opportunities and facilities for gaining knowledge are vastly improved in that direction. In addition to this, I feel satisfied that the standard of requirements for graduation on the part of all our institutions is of a decidedly higher order than used to prevail; and should be exceedingly sorry

to think otherwise, for it certainly was low enough at the time when a sense of duty prompted me, as an individual member of a faculty, to protest to the Board of Trustees against the laxity which existed in that particular; this, however, was in another institution than that with which I now have the honor to be connected. Like some other experiences of the past, which I have been disposed to permit to sink into oblivion, rather than bring them under the notice of my fellow-practitioners, I should have made no reference to this, but for the assertion, that of late students have been guarantied their diplomas before matriculating, and then graduated upon two months' instruction. That such things may have been done, is possible. I sincerely believe, however, that such charges cannot justly be brought against any dental institution. It is true that practitioners who have been diligent students for years, and thus by close application to their books, have made themselves as thoroughly acquainted with the various departments of science as they were *skillful* as operators, have after an attendance upon lectures for a few months come forward as candidates for graduation and passed the ordeal with the highest honors, and in a manner which would reflect credit upon any one, let his abilities and attainments be ever so exalted; but who shall assert that by such a course as this, dental education is tending *downward* rather than *upward*? So that a man has knowledge, it matters not where he gets it, whether inside of schools or out of them. That knowledge may be acquired more readily and easily in good schools, with able and competent teachers as *aids* and *guides* to the *student*, is undeniable, but that it *can be secured* outside of them by minds possessing an indomitable will and concentration of purpose with a greater expenditure of time, patience, and money, is equally true. The influence upon education is far more salutary when such men come forward and submit to an examination on the part of a capable and reliable faculty, who shall decide upon their right to possess a diploma, than when the so-called *honorary diplomas* are distributed *ad libitum* upon gentlemen who, however worthy as men and practitioners, have neither attended lectures, submitted to an examination, nor distinguished themselves in any way as contributors to the science and art of the profession. There may have been a period when such practices were to a certain degree admissible, but that has passed away, and it may be safely said that the liberal distribution of diplomas in this way is calculated to render them as valueless in the estimation of their possessors as they are in that of the profession and the community at large.

To say that the increase of schools, by inducing competition, tends to degrade education, indicates, if not an entire ignorance of the subject, at least narrow and contracted views of it. No country in the world has left upon the page of history a more valuable and enduring record of mental cultivation and development, and the advancement of science and art, than the Grecian Republic. Was this due to the action of a single school or the operation of numerous academies, lyceums, etc.? In our own free country, and particularly in the Northern section, is the general intelligence of the people attributable to the operation of a single institution or to the numerous universities, colleges, high-schools, and the public and private primary schools? Again, any one who is at all familiar with the literature of science is aware of the fact that to Germany, more than to any other

country, we are indebted for some of the most important discoveries made in every department of science during the past half century. To such an extent is this true, indeed, that with propriety this may be almost called the Teutonic age. In substantiation of this it is only necessary to mention the names of a few among the many active German minds to whom the world of science is under lasting obligations, viz., Schwann, Schleiden, Oken, Leibig, Virchow, Kölliker, etc.

The German discoverers and writers have first been called transcendental, visionary, idealistic, and then at last when their facts and arguments have proved irresistible, they have been adopted, and too often by unprincipled plagiarists, without acknowledging the source whence their matter was obtained.

Is this truly wonderful activity on the part of the German mind, and which has completely revolutionized organology in particular, attributable to the operation of a single university or to the beneficent influence of numerous universities in various parts of that great country, affording, as they do, the most ample facilities not only to students, but also giving employment and securing opportunities to a number of professors to devote themselves to favorite departments of science, and thereby extend each year the boundaries of science in all directions?

It demands no argument to prove, that the more institutions of learning a country possesses the more extended is the diffusion of knowledge and the more enlightened and useful are its people. That which is true of general education is equally true of professional education, and although self-interest may prompt men to oppose the establishment of new institutions of learning, it is a generally recognized fact that private interest, beyond a question of doubt, must ever be held subsidiary to the general good.

In the ordinary operations of the world, men of marked ability and integrity do not complain of competition, but rather favor it than otherwise, satisfied that by such means the latent powers of all are more likely to be fully developed. They know that the unreal cannot always pass for the real; that shoddy, however complete the cheat may be, will not wear like good broadcloth; and that, although the paste brilliant may glitter in the rays of the sun, its meretricious lustre pales before that of the genuine diamond. The same thing is true of men and institutions; they may be *overrated* or *underrated*, but sooner or later, time, which settles all things, solves such matters, and permits the truth, the whole truth, and nothing but the truth, to stand forth in the clear light of noon-day.

No better evidence can be afforded that dental education is advancing than the elevated character of the discussions in the national and local dental associations. In place of the old topics which formerly were discussed over and again until they almost became threadbare, those difficult and intricate subjects which require an intimate and extended acquaintance with science are taken up and handled in a manner which indicates a perfect familiarity with them. Not only is this true of the *theoretical*, but the *practical* is also attended to, for at the meetings of all the associations now *clinics* are held, and thus opportunities are afforded for demonstrating the manipulative abilities of operators, as the discussions test their mental capacities and attainments. Some of those who engage in these various

directions, and in a manner highly creditable to themselves and the profession, are gentlemen who have recently graduated from the dental colleges.

In the ages progress implies deficiency to be supplied, and error to be corrected. It may be doubted whether the perfection of science and art will ever be reached; indeed, I believe it is decreed by an all-wise Providence that endless struggle and approximation should be the law of our intellectual being, the condition on which we have the activity of busy life, and not the sluggish indolence of possession, which is mental death. Recognizing this, it is a source of satisfaction to notice a number of young and generous minds, engaged in the effort to urge forward with eager and emulous hands the ball of progress, and while this amicable struggle continues, little apprehension need be entertained relative to the cause of dental education.

In conclusion, as one who favors and desires the honorable success of all institutions, not only those now in existence, but in addition those which may be established hereafter, I have studiously avoided advocating the claims of any school, and have only aimed to respond with truth and justice to an unjust and depressing assertion, affecting alike the interests of the profession and the community at large, and with the facts and arguments which have been presented, I leave you and the profession to decide whether dental education is tending upward or downward.

Commencement of the Pennsylvania College of Dental Surgery.

The Tenth Annual Commencement of the Pennsylvania College of Dental Surgery was held at the Musical Fund Hall, Philadelphia, on Thursday evening, March 1, 1866.

The Valedictory was delivered by JAMES TRUMAN, D.D.S., Professor of Dental Physiology and Operative Dentistry.

The number of matriculants for the session was sixty-nine:—Pennsylvania 17; New York 16; Cuba 9; Maryland 5; Port Rico 3; New Jersey 2; Illinois 2; South Carolina 2; Virginia 1; Tennessee 1; Delaware 1; Missouri 1; Ohio 1; Iowa 1; Spain 1; Georgia 1; North Carolina 1; Michigan 1; Massachusetts 1; Maine 1; Wisconsin 1.

The degree of D.D.S. was conferred on the following gentlemen:—John P. Adams, New York, Salivary Deposits; George K. Bagby, Virginia, Nitrous Oxide; Henry Berhard, New York, Causes of Caries; Thomas H. Bradfield, New Jersey, Inflammation; Francis A. Brewer, Missouri, Dentistry a Science; Samuel C. Britton, Maryland, Predisposing causes of Caries; Charles Buffett, Ohio, Arsenic; Perley M. Christie, Pennsylvania, Inflammation; William H. Crary, New York, Rubber versus Metal; Edward S. Davenport, New York, Iodine; Franciscus Dominguez, Cuba, Inflammation; Eugene C. Flamand, Cuba, The Art of Filling Teeth; Hamilton Forrest, Maryland, Decay of the Teeth and Treatment; Albert Hape, Georgia, Dentistry a Science; John A. Hauser, Pennsylvania, Treatment of Exposed Pulp; Milton Keim, Michigan, Artificial Dentures; Washington K. Lineaweaver, Pennsylvania, Inflammation; Francisco Mignotte, Cuba, Extracting Teeth; James W. Nelson, Tennessee, Indigestion as a

cause of Caries; Henry S. Noble, New York, Antrum Highmorianum; Francis A. Ramsay, Pennsylvania, Sensitive Dentine; Henry C. Register, Maryland, Digestion; Louis Jose Salicrup, Port Rico, Extraction of Teeth; William Smedley, Pennsylvania, The Fifth Pair of Nerves; Henry J. Smith, Pennsylvania, Sensitive Dentine; James S. Thomas, New York Chemistry; William H. Trueman, Pennsylvania, Materials for Filling Teeth Agustin de Varone, Cuba, Development of the Teeth; Julien J. Vanderford, Maryland, Dentistry; John H. Vedder, New York, Treatment of Irregularities; Ransom Walker, New York, Diagnosis; William C. Wardlaw, South Carolina, Anæsthesia in Dentistry; John B. Wheeler, New York, The Dental Pulp; A. Lawrence, Massachusetts; J. M. Barrett, Pennsylvania; W. G. A. Bonwill, Delaware.

The following are the reports of the demonstrators:

OPERATIVE DEPARTMENT.—Number of Patients visiting the Clinic, 2,480; number for whom the following operations were performed, 1,692; Gold Fillings, 671; Tin Fillings, 562; Wood's Metal, 25; Hill's Stopping, 28; Amalgam, 18; Treatment and Filling Pulp Cavities, 180; Superficial Caries Removed, 20; Removal of Salivary Calculi, 64; Treatment of Periostritis, 18; Treatment of Alveolar Abscess, 28; Treatment of Inflammation of the Gums, 11; Treatment of Partial Necrosis, 8; Treatment of Irregularities, 20; Pivot Teeth Inserted, 2; Extraction of Teeth and Roots, 2,107. Total, 3,759.

MECHANICAL DEPARTMENT.—154 Patients were supplied with the following Artificial Dentures:—Whole Sets of Teeth, 43; Full Upper Sets 50; Full Lower Sets, 3; Full Upper Set, on Porcelain Base, 1; Full Upper Set, Block, 1; Full Upper Set, Continuous Gum, 1; Partial Upper Sets, 47; Partial Lower Sets, 7; Obturator,* 1; Teeth Mounted on Metal Base, 508; Teeth Mounted on Hard Rubber Base, 1,694; Whole Number of Gum Teeth, 1,548; Whole Number of Plain Teeth, 664; Number of Teeth Mounted for Patients, 2,212. *Depositing Sets.*—18 Full Upper Sets on Hard Rubber Base, Number of Teeth, 252; 2 Partial Sets on Hard Rubber Base, Number of Teeth, 13; 1 Full Upper Set, Continuous Gum, Number of Teeth, 14; 16 Full Upper Sets, on Metal Base, Number of Teeth, 224. Total Number of Teeth Mounted, 2,735.

Commencement of the Philadelphia Dental College.

The Third Annual Commencement of the Philadelphia Dental College was held at Concert Hall, Philadelphia, March 1, 1866, at half-past four P.M.

The Valedictory was delivered by J. FOSTER FLAGG, D.D.S., Professor of Institutes of Dentistry.

The number of matriculants for the session was forty-six:—Pennsylvania, 14; Massachusetts, 7; New York, 6; Germany, 3; Nova Scotia, 2; Cuba, W. I., 2; Ireland, 1; Barbadoes, W. I., 1; Ohio, 1; New Brunswick, 1; Illinois, 1; Louisiana, 1; Kentucky, 1; Vermont, 1; New Jersey, 1.

The degree of D.D.S. was conferred on the following gentlemen by the

* Made for a soldier having lost his teeth and some of the adjacent bones from a gun-shot wound.

PRESIDENT, REV. RICHARD NEWTON, D.D.:—John G. Angell, Louisiana, Scorbatus; Jacob L. Baker, Pennsylvania, Aveolar Abscess; William E. Birdsall, New York, Facial Neuralgia; Joel B. Bower, Pennsylvania, Aveolar Abscess; Conrad Degen, Germany, Mercurial Salivation; J. L. Fordham, A.M., New York, Results of Inflammation; John J. Hassell, New York, Treatment of Odontalgia; Allen Haley, Nova Scotia, Artificial Substitutes; John D. Moore, Barbadoes, Refining Gold; Alfred P. Merrill, Massachusetts, Facial Neuralgia; Saxton P. Martin, M.D., Massachusetts, The Blood; N. C. Orrick, Louisiana, The Blood; Edwardo Rodriguez, Cuba, Caires of the Teeth; Albert H. Taylor, Pennsylvania, Crystal Gold; J. N. Wunderlich, Pennsylvania, Extracting Teeth. Ad eunden, Thomas C. Stellwagen, D.D.S., Philadelphia, Pennsylvania.

Commencement of the Baltimore College of Dental Surgery.

The Baltimore College of Dental Surgery held the Twenty-sixth Annual Commencement on Friday evening, March 2, 1866, at seven and a half o'clock.

The number of matriculants for the session was thirty-five.

The Valedictory was delivered by PROFESSOR BOND.

The degree of D.D.S. was conferred on the following gentlemen:—Charles P. Baird, Tennessee; Andrew B. Brockins, Florida; Stanley Brown, Texas; John P. Comubi, District Columbia; Albert P. Gore, Maryland; William A. Jones, Virginia; Robert P. Nevili, Alabama; Thomas N. Read, Virginia; Chas. H. Thayer, Rhode Island; C. W. Westmoreland, Alabama.

ITEMS.

THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY offer to allow members of the profession who have been in practice since 1852, to be eligible for graduation without attendance on lectures at the College. The qualifications for graduation are about the same as for a student. He must prepare a thesis, present specimens of his workmanship, and undergo an examination, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. This is certainly a very liberal offer on the part of the Faculty. Previous to 1852, the course necessary for a student to pursue to perfect himself in Dental Science, was not as well defined as it is now, nor did public opinion demand so peremptorily a collegiate education on the part of the practitioner. Constant practice, together with the influence of Dental Societies and journals, have rendered many proficient—and if they are willing to stand up bravely and endure the "fiery ordeal," it is eminently proper and just, that they should be allowed to do so. We would, however, advise those living in the vicinity, by all means to avail themselves of the benefits of the lectures and clinics, and those living at a dis-

tance, if at all convenient, to spend a month or two in the same way. If the above works well, we presume the other colleges will make the same offer. We believe they are all willing at present to confer the degree upon dentists of at least five years standing, who will spend at least two months in attendance at lectures, and who pass a successful examination. Another thing remains to be done, and that is to bestow the Honorary degree upon our pioneer brethren of reputed skill and learning, who have been practicing twenty-five years and upwards, and who were working men before Dental Colleges were established—and to whom in a great measure, dentistry owes its present advancement. Such a mark of approbation from their distinguished and learned younger brethren would encourage and cheer them in their declining years.

DR. GEO. WATT has resumed his labors as a contributor to Dental Literature. In the January number of the "Dental Register," (the new title of the Dental Register of the West,) there is a communication from him on the subject of "Dental Materia Medica," the introduction to which was published in the December number. The principal uses in dentistry of nitrate of silver, he considers to be an obtunder of sensitive dentine, and as an application to diseased gums. He thinks it is not entitled to rank as a styptic, on account of the coagulum formed, being soluble in albumen thus enabling the blood to dissolve its way through it. Creasote devitalizes the surface of the pulp, and forms an elastic, flexible and insoluble layer over the subjacent living parts. By applying it around the neck of a tooth, the pain of dental periostitis is often allayed. Considers it a better styptic than nitrate of silver, but inferior to tannin, or to the perchloride or the persulphate of iron. He ridicules the fallacy in regard to its causing decay of the teeth, to refute which he instances the impregnation of creasote with smoked bacon to prevent its decay.

DR. JAS. E. GARRETSON is contributing a series of articles on the "Tumors of the Mouth" to the pages of the "Dental Cosmos." The merit of these articles alone should insure that journal a wide-spread circulation. They are well calculated to fill up the gap occasioned by the furnishing of "Practical Hints" through the resignation of Dr. White. Dr. Garretson is not only a dentist, but a surgeon and lecturer, and understands how to render a dry subject interesting and readable.

THE number of students in attendance at the several Dental colleges in the United States during this session, is estimated to be about one hundred and eighty, much larger than at any previous year.

AMONG the contributions to the Museum of the Pennsylvania College

of Dental Surgery, the "Dental Times" acknowledges the receipt from Dr. C. C. Williams, of this city, a cranium of one of the natives of the Sandwich Islands, with a perfect and regular denture. While walking on the shore of the Island of Ohua, on a recent visit, he discovered it two-thirds buried in the sand, the part exposed being bleached to a pearly whiteness. The cranium was filled with the bones of a child. The natives wished to retain it as a charm against the Evil One, and were opposed to his taking it away. The Faculty invite an examination of it.

THE January number of the "Dental Times" contains as usual, several interesting articles from the pens of its editors. This journal always presents a fresh and neat appearance; and one is reminded from its general looks, of the once welcomed "Dental News Letter." One of the editors, Dr. G. T. B., after laudating one of the articles in the December number of the "Quarterly," criticises in a kind manner its practice, common with other dental periodicals, of republishing articles from other dental journals. We do not agree with the editor in the opinion there expressed. An article taken occasionally from another journal tends rather to increase than decrease the subscribers to that publication. It thus brings it before the mind of the reader, and solicits in that quiet way his subscription, and he very properly says, "This reminds me that I must subscribe to this journal. It always contains interesting and practical articles." We think, too, that a communication copied from another journal, if it abounds in originality and good sense, receives more attention at the hands of the dentist, even if he should have perused it before, than an original article with no plausible claim to notice. The tendency, therefore, of an occasional "credit" to a journal which we admire, and do not care to ignore, is to stimulate the desire for more varied reading, and keep before the mind the existence of other journals which the post-man will in future bring.

VARIETIES.

"THAT decrepit man going along there, reminds me, Doctor, of that tooth of mine which you had so much trouble to extract." "How so?" "Because he's *in-firm*!"

ONE of the poets, acquainted with the common intercourse of familiar society, recommends as a remedy for love "to make her smile who has bad teeth."

"WHY is this Park," said a heartless fellow who met a man with his face tied up, "Why is this Park like your mouth?" "What do you mean sir!" exclaimed the man indignantly. "Pardon me, my friend," expostulated the questioner, "but I think from the manner in which you have your face tied up, that you have the toothache, and I am, therefore, justi-

fied in saying that this Park is like your mouth, because it contains several acres" (achers.)

A REMEDY for a cold in the head, suggested by the "French Hospital Gazette," consists in inhaling the tincture of iodine by holding a vial of the tincture under the nose. The warmth of the hand volatilizes the tincture. It is thus to be breathed at intervals of three minutes, and the malady is soon conquered.

AN Italian physician has recently discovered a remedy for tri-facial neuralgia. He adopted the expedient of covering all the painful parts with a thick coating of collodion, containing a certain proportion of the hydrochlorate of morphine. This treatment was perfectly successful; the relief was instantaneous and permanent, and the coating fell off in the course of one or two days.

DR. JULIUS FISCHWEILER, of Magdeburg, recently died at the age of one hundred and nine years. In his will he ascribed his great age to his constant habit of sleeping with his head toward the North, and the rest of his body, coinciding as much as possible with that of the meridian—that is, with his heels toward the South. From persisting in this habit, he considered that the iron contained in our system, finding itself in the direction of the magnetic currents, which are constantly flowing over the surface of the globe toward the North pole, becomes magnetized, and thus increases the energy of the vital principle.

A WESTERN paper gives an account of the discovery of a cave at St. Joseph, of vast dimensions and startling magnificence, with niches, columns, recesses, fountains, all arranged as if by the hands of a great artist. On one side was a raised platform of pure white marble, and upon it was found a human skeleton of gigantic size, and in excellent preservation. Its length from head to foot, was thirty-eight feet six inches, and the circumference of the head was about six feet. It may be easy to believe about the size of the head, but it is thought the narrator has made the length of the skeleton too much. If he would take off about six inches, many might believe in it.

DR. J. FOSTER FLAGG, at a recent meeting of the Odontographic Society, said that he thought about eight years was the average duration of fillings between incisor and cuspid teeth. He had seen excellent work fail in one year, and very ordinary operations in good preservation, after a lapse of thirty or forty years.

THE great secret of working tool-steel is announced to be strong hammering, and placing the steel under a powerful jet of water. This makes the hardest kind of metal.

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THE TOOTH BRUSH—ITS INFLUENCE UPON THE TEETH.

THEORIES, seemingly plausible, but in reality purely speculative, as regards the causes of a great many of the diseases of the teeth, are conscientiously advanced by many practitioners, and maintained and circulated so persistently and extensively, as to cause very often, though indirectly it may be, injury to the very teeth which it is their design to save. For instance, many dentists, and among them some very eminent ones, attribute denudation of the teeth to brushing, and freely advise their patients, who place themselves under their care, for the treatment of such teeth, to be careful not to use the tooth brush too much; and above all, to beware of a stiff one. Now, among the most refined and the most scrupulously clean in other respects, are to be found very many who are prone to neglect this important daily duty; and as such advice soon spreads, they very willingly take it to themselves, and are rendered thereby still more negligent,—a dentist, therefore, should be careful that what he promulgates be fixed truths, and not hypotheses of his own invention.

In support of the theory just alluded to, it has been suggested that the mechanical abrasion of the enamel, by the tooth brush, is somewhat similar to “a continual dropping of water wearing away a stone.” Even were we willing to grant this, we might say of the enamel as of the stone, that it will take years to wear away the thinnest superficial layer; and, as where the water drops, there the stone is worn, so where the tooth brush touches there is where the enamel should be worn. Now, we know that denudation is found only in certain spots—most frequently along the margins of the gums; spots, where a moment’s reflection will show that the brush is not apt to touch. It is upon the enamel near the junction of the neck and crown, that the mucous oozing from the gums touches and deposits a precipitate—generally green and slimy—in a concentrated state, before being neutralized by the alkaline secretions of the salivary glands, and

thus rendered harmless. This, in time, acts as a solvent, forming soft white decay, capable, very frequently, of being washed away by the fluids taken into the mouth, or rubbed off by the action of the lips. A groove-like excavation is thus formed, denominated by some dental writers "denuding of the teeth," and improperly by others "decay by denudation," which latter presupposes the disease inherent in the tooth itself, as advanced by Mr. Hunter. Dr. Harris transcribes Mr. Bell's remarks upon this latter supposition as follows: "Mr. Hunter describes very accurately the result of superficial absorption of the bony structure, a circumstance which I have occasionally seen, though more rarely than the present abrasion of the enamel, with which it cannot for a moment be considered as identical. In one case, the enamel is gradually and slowly removed by a regular and uniform excavation; in the other, the abruptness and irregularity of the edges, show that it has broken away at once, from having lost its subjacent support. The cause of the former is external; in the latter it is in the enamel." This is, of course, entirely hypothetical; it being very doubtful whether caries ever has origin within a tooth. By being deficient in lime salts the acids may act upon it with greater energy, but even this is denied by some very close thinkers, who claim that caries is caused wholly by the acid secretion,—the amount predominating in the mouths of those whose teeth are prone to decay.

That the brush may indirectly induce decay of the teeth, by causing the gums to recede, we do not deny, but acknowledge it to be barely possible; nevertheless, if such is its action, the instances are very few. The recession of the gums can almost always be plainly shown to be the result of the action of the mucous slime, more than of any other agent. When merely superficial, the treatment consists in polishing with Arkansas stone and emery powder, finishing with a pine or orange wood stick and pumice stone. The exalted sensibility of the part can be reduced by means of chloride of zinc, applied to the dried surface, on a small pledget of cotton, and held there for five or ten minutes; the gum must be kept dry, with small pieces of prepared spunk, or other absorbing substances, in order to prevent the mucous diluting the application. If a cavity has formed, the same treatment should be resorted to immediately before excavating. The acid secretions being in excess in such mouths, the patient should be directed to rub the teeth with slightly moistened chalk, or bicarbonate of soda, a few times a day, for a few days before the operation.

The brush should be used at least once every day, although twice—before breakfast and on retiring—is more advisable. By brushing the teeth in the morning the mouth is cleansed of an accumulation, in many instances, of vitiated secretions, mucous and salivary, disagreeable enough

to sicken a cat or a dog; and it has been averred by some, poisonous enough to kill it. We have not, however, experimented with it, and cannot therefore vouch for the truth of the assertion. By brushing the teeth at night, the mouth is relieved of particles of food, otherwise remaining to undergo fermentation. The approximal surfaces should be cleansed with floss or saddler's silk; and chamois skin and prepared chalk should be used where there are fillings, in order to cleanse them, and to neutralize the effect of the acid, from the secretions and those generated by fermentation. A fine pointed stick, rubbed on the labial and buccal surfaces, along the margin of the gums, once or twice a week, will remove any soft tartar which the brush may fail to reach.

As far as our own experience goes, we have met with but few brushes too stiff for an adult person to use. Those unfit for use are generally found among the cheaper kind. If a brush should be extra stiff, a week's wear will be sufficient to soften it. To do its work effectually, it should be kept in a dry place, and not used more than once a day. When used oftener, the moisture of the brush, under ordinary circumstances, cannot evaporate within twelve hours, and the bristles are of course soft and unfit for use. If the teeth are cleansed twice or three times a day, a corresponding number of brushes should therefore be used. In selecting a brush, we would advise a patient to choose from the finest assortment, shut the eyes and take the first one the fingers touch.

A. T.

THE NEW ANÆSTHETIC.

IN mentioning this new and, in my judgment, exceedingly useful discovery, to medical men and dentists, I design rather a brief statement of facts than to indulge in a labored essay.

Chloroform and ether have done too much good service to be displaced by a successor, in the field of *heavy operations*. *General anesthesia* is clearly necessary, when we have to perform the more important surgical operations, yet, we doubt whether any one can inform us what necessity exists for stultifying the whole system of nerves, when we have occasion for a *local* operation. It will be understood that I commend the use of ether, as a local anæsthetic, only for operations in minor surgery, such as the removal of superficial tumors, small operations on the lineal absorbents, the extraction of teeth, &c., &c. Of course, where anything more than deadening the superficial tissues is needed, it will be ineffective. We desire a means of procuring insensibility, without the danger of sacrificing life.

If a piece of ice is placed in the hand, the part touched becomes "dead;"

i.e., the heat is taken so rapidly from the tissues that the blood cannot immediately supply the loss, and consequently, numbness equal to insensibility of death follows; but, as the vital force of the body is unaffected, as soon as the cold is withdrawn the blood returns to its natural course, and restoration is immediate. In this consists the advantage of *local* over general anæsthesia.

It will be understood, that by the name "ether," sulphuric ether is always meant. The different kinds of ether are distinguished by the name of the acid employed in the process, as hydrochloric, nitric, &c. We use the language of the shops. Sulphuric ether is prepared by mixing together equal parts (by weight) of alcohol and sulphuric acid, in a glass retort, and then shaking them together and distilling them in a sand-bath. The distillation is continued to a quantity of liquid equal to one-half of the alcohol employed has passed over. The heat of the sand-bath should not be greater than 200° . Great attention must be paid to the heat during the operation. I leave the details of the process at present, as it can be purchased, tolerably pure, at the druggists.

The radical of ether, according to Liebig, is C_4H_5 . Sulphuric ether is not strictly an acid, one atom of the oxygen being replaced by an atom of hydrogen.

In applying the ether in the form of fine spray, upon the part to be benumbed, it is necessary to procure a tube, with a small orifice, syringe shaped, and inject the finely divided mist with force against the tissues. Its use, as an anæsthetic, particularly for extracting the cutting teeth, and bicuspsids, is plainly pre-indicative. I hesitate, with the incomplete instruments now in use, to commend it when operating upon the molars, as it may cause irritation of the fauces, glottis, &c.

I append one or two hints in using it.

The patient is saved much pain, if before the operation the nerve cavity is well stopped with cotton, wool, or other substance.

Sloughing of the gum does not follow the judicious administering of sulphuric ether, as is too often the case with other ethers, and freezing mixtures.

In procuring local insensibility, it is sometimes well to mix the ether with pure alcohol, or what is much to be preferred, chloroform. Pure ether will produce blinding of the surface in from 20 to 60 seconds; it is therefore to be preferred. When the ether and chloroform are mixed, it takes much longer—sometimes 5 or 7 minutes. The fluid to be used will suggest itself to the observing practitioner. For the larger operation in surgery, such as the excision of a deep-seated tumor, the extraction of a bone, and important operations, the mixture of ether and chloroform

suggests itself. For extraction of teeth, we commend the ether pure. It will be well to hold the fluid about one and a half inches from the part to be projected upon.

I have only hinted in this brief essay at the *modus preparandi* and *modus operandi* of this valuable adjunct to the dentist's labors. I may recur to the subject again. W.

THE DUTY OF THE DENTIST TO HIS PROFESSION, HIS PATIENT, AND TO HIMSELF.

BY JULIUS CHESEBROUGH.

[Read before the Michigan Dental Association.]

WHATEVER may be said upon this topic, on one thing we can certainly rely—that we all fall far short of our duty. To know how to perform that duty, so as to do justice to all, is worthy of our study and care. God has ordained for us a work, and we have chosen this one, upon which to hang our attainments, to raise them, each day, higher upon the standard of excellence. Let us look into the sphere we are filling, and find out, if we can, what the fulfillment of God's ordinance is.

I say we have chosen this work, and to labor in this field, for our life-task,—a field immeasurable, unbounded, unfathomable. He has endowed us with certain faculties, which we are not to hide in a napkin, but to improve, and add interest, so that when we surrender them, they will be greatly increased. He has endowed us with a brain, a seat of reason, upon which impressions can be indelibly printed, and from which emanate thoughts of good or evil. He has given us eyes that we may see, ears that we may hear, and an utterance that we may be able to impart what we know. All these are *not for our own good*, but for the benefit of mankind. His intention never was that we should be for ourselves alone, but that we should minister to the wants of our neighbors as well as to our own.

Were it best that there should be no divinity, no growth in mind, no continual approach toward perfection, He would never have "formed us after his own image." But that he has done so, and that the race of man comprises so many beings, is proof that His will is that we go onward and upward.

In consideration that our duty is one of progress, do we fill the measure God has ordained for us; and if not, wherein do we fail?

I call your attention to these three topics:

Our duty to our profession, our patients, and ourselves. I speak to you, individually, and, classing as a whole, I embody the question into that word, *Our* duty,—not yours, individually, nor mine; but let each one of us take these matters to himself, and ask, Have we done our duty?

The question may arise in the mind of some one here, what duty do I owe to any of these three that I do not fulfill?

Let us look upon our duty and see what it really is.

For long, dark, weary years, our profession groped its way, "dragging its slow length along," until it has taken a sudden start, and has now its place recognized and accepted by the world.

From whom did it receive its impetus, and what were the labors of those that gave it that impetus? We all know whom we honor, when we proudly repeat the names of Hunter and Bell, Tomes, Kolliker, Townsend and Harris, and the goodly number of the early apostles, who dispensed the doctrines that we all know, little by little. Have we done our duty to our predecessors, who have given us of their toils and labors, years of night-study and investigation? Let each one of us answer the question, and answer it well; and from this moment, henceforth, go and do likewise.

Our profession, I have said, has received an impetus unparalleled in any record. It has sprung into existence during the past century, and has now an accepted position from which it will never recede.

But let me ask each one of you, how much have you helped to advance it during your lifetime; and where have your labors shown themselves? Would to God that I had the whole world of dentists to put this question to, and to hear the answer that must come up from some breasts. Have your labors been such as to elevate the profession above that of mere mechanical employment? Have your researches into that field of science, ready for the sickle of investigation, been such as to enable you to bind up a sheaf, from which you may separate the grains of fact from the straw of theory, and bring those grains before the feet of your compeers, and say, "here is my contribution?" Or have you been content to look in upon the workers in the field, and see how they gather in the straws, and in the great showing, been content to look at their grains, and gain from their labors, that for which you have returned no equivalent? Have you, by your example and counsel, lifted up your ignorant brother worker, so that he will look upon you as a friend of elevation? Or have you, by derogatory remarks, tended to degrade, rather than elevate? Have you studied day and night to fit yourself for the sphere you occupy? Have you investigated the science of disease, so that you may know how to combat it in the thousand shapes that it manifests itself upon those organs, which it is your specialty to treat? Have you made a note of such labors, and given them to the world, thereby adding your grain to the store already gathered? Or, on the other hand, have you been content to set yourself down, in indifference and carelessness, and eat of the fruit of others' labors? Have you given to your patients that high character of operations, which approach perfection, thereby enabling them to pay regard to those organs which are to them worth more than jewels, and which brings the profession up, in their minds, to the standard of excellence, and wrestles its from its low position where, through carelessness of operators and ignorance, they have consigned it?

You may say, as I have heard some say, "I cannot do such things in my practice, my patients won't pay for it." I say *you can* do such things in your practice. Do you *always* look merely to the pay for the work accomplished? Then, indeed, you will always be a dolt. Strike above all this,—let such thoughts take themselves to the wind; and strive to bring up your profession, instead of bearing it down. I tell you, sirs, your patients are able to discriminate; and no one will ever object to remunerating for benefit received.

It may take you some little time to educate your patients, but they will be easily educated; and once educated to appreciate, is a faculty never lost.

How much better for you to feel that a patient owes you much beside the money consideration received, for the service done, than to meet one and have your conscience tell you you did not do that patient justice; for his inability to pay, or your ignorance of the case, has rendered him a deformity. I always want my patients to feel that they still owe a debt of gratitude for service done.

We need more careful, earnest thinkers, more hard investigators, more workers who will record their research. We have no literature, or next to none. What we have is good enough; but it is not enough. Your daily practice affords something that is of moment to the rest of the profession; then why not give it?

A young man once said to me, "Your profession seems to comprise so little that it must be very easy." Years have passed since that day; and his opinions have wonderfully changed. "I thought," says he, now, "that the practice of dentistry was that of filling, extracting, and inserting teeth; but now, after years of study, I find that I have always been in error. I have found out that he who only does these three, without inquiry as to the nature and source of disease, knows nothing. I thought it an easy road at first; but I find it a rough one, and that I have to pick my way among its rocks and stumps, and in the darkness, that sometimes lies before me, I find myself lost." And so will we all be lost unless we study our charts, and wherever we find a sunken rock, note it, at once, for the benefit of humanity. What would the world say of that sailor that discovers a reef in mid-ocean, and say, "I will say nothing of this to any one. I will know where it is, and it will not baffle me more. Let those that sail this way find it out; and what matters it to me, though a shipwreck ensues, and life is lost?" Would he not sink into utter disgrace; and would not he receive the contempt of the whole world? And how do you—one and all of *us*—differ from him?

Your duty is, by your industry and faithfulness, to elevate your profession,—by your daily walk and conversation to give it additional dignity.

And what to your patient?

Frequently the very bliss of ignorance presents itself to you. What is your duty in such a case? to let that ignorance remain? or weed it out from a brain adapted for higher things? The preconceived idea that many have received is, that their teeth are worthless as soon as they give them trouble; and the sooner they are rid of them the better. Have we not a duty to perform in such a case as this? and must we not, at once, turn teacher, until we see that our patient has learned the first rudiments of common sense? We are all very susceptible of fact, and are easily convinced. Let us but know the fact, and we are at home. And our patients are as easily influenced as ourselves. We have but to speak the word, and our knowledge of the matter is at once accepted.

We must point out the error of their lives, and let them understand that these organs are of more value than any others. Show them that, by proper treatment, they can be saved; and you will not have to teach those patients again. I can call to mind many who are among my best patients, who are educated patients, who doubted greatly at first, but who are now beyond a doubt.

Our duty is to give, as freely as we have received, of that which will

tend to elevate our calling. Indulge in no theory, but confine yourself always to the fact; and give that fact as tersely as words will allow, coming down, for the time being, to the level of the capacity of your patients, and let them ascend, step by step, gaining confidence with you, at each successive one, until they will accept your direction as law, and abide strictly by it. Never deceive them upon the lightest matter or most trifling occasion. Let them gain confidence in you, and your work is done. Where ignorance is at fault, educate it to the excellent standard; where obstinacy comes in contact with you, send it away, have nothing to do with it, wash your hands of all connection with it, and let it depart in peace. Education will always appreciate a well appointed labor; but stubbornness—never. Send it out of your sight. When a patient comes to your hands for treatment and advice, you must be prepared to *give* that advice; and woe to you, in the last day, if you have given it wrong. God's judgment is everlasting, and will surely find you out, when all things are to be known. It will not be your fault if, after knowing what is right, and knowing, dare maintain, your patient does not accept your advice. But do not be drawn into doing a wrong act because your patient insists upon it. Have the manliness to come out boldly and say, "*I won't*," even though the heavens fall. Always advise your patient to have the best operation performed, regardless of expense. No one can ever master his profession that will advise otherwise. Your patrons will, sooner or later, find you out; and your sayings and doings will surely come home to roost.

Our duty is to be always kind and gentle—never rash or petulant. No annoyance should ever rouse our temper; but we must smother the burning flame and quench the fire. Your patients will soon become affable and easy if they see you undisturbed. But when you are cross, and speak sharply, they will ever remember it.

If you have an operation of magnitude and severity, acquaint them of the amount at once. They will abide by your decision better than when deceived. Whenever pain can be mitigated, it must be done. We were not ordained to create pain, but relieve suffering; and this we can do, if we but know our duty.

With children, our duty is a greater one,—kindness, all over, within and without, in the very atmosphere, in all the surroundings, must be inflexibly maintained. By so ingratiating ourselves into their affections, we may make our operations a source of pleasure instead of dread. We hold the power within us; and, if we will, we can do as we please. We must be firm, yet courteous; inflexible of purpose, yet affable of manner; and, knowing our duty, maintain it.

Many with whom I have spoken these things have said to me, "I must live; and to live, I must cater to the fancy of my patient." To all such I can only say, that if, through your own or your patient's ignorance, you cater to their fancy, you do yourself and them great wrong, and the gain that results from such action, affords no pleasure. Better starve than sin outright. Be poor, but do your duty; for gold, gotten through deceit or falsity, will melt away.

And what of the duty you owe to yourself. This age demands intelligence; it demands thought; it demands knowledge; it demands *brains*. Are we up to the standard? Do we appreciate our position? Are you,

gentlemen, each one of you, satisfied with your attainments? Are you doing your duty to yourself, with the knowledge you have, and would you trust yourself under your own hands? Are we thoroughly acquainted with the intricacies of disease, and the complications of the parts which we have to treat? Can we grapple with all the minutiae of morbidity of function, which every day comes under our observation?

How many pass over these things as trifles, which are "apples of gold." I have heard many persons say, "I never think of examining into the condition of the secretions of the mouth, or of anything but the teeth. I look at them, and what I cannot fill I pull. I never ask about the patient's general health, symptoms or afflictions. I do what I can to the teeth, and let them go." I tell you, sir, that if you did inquire about these minutiae, and study more of the diseases that have their origin or influence in or upon the teeth, your labors would be much easier than they now are, and your patient would be better satisfied. We must look these matters *square in the face*. Our profession is not even with the age, it is far behind it. There are some who are equal to the hour; but the laborers are few. The age is demanding of us better work, more perfect operations, and, above all, a knowledge of disease and complications that show themselves upon the teeth, in order that we may save from ruin the thousands upon thousands of organs that now go to destruction.

It is no less a duty to the profession and our patients than to ourselves that we should know these things. Our education must be of a higher order than that of being self-taught, or of receiving it from a self-taught preceptor. The world demands it, our patients need it, the profession will insist upon it.

Do we, as a profession, study enough? I emphatically say no!

Do we think enough? No! Do we investigate enough? No! Do we write enough? No!

From whom do we receive all our intelligence? From a score of dental writers; hardly more.

It is a burning shame to us, that the labors are thrown upon the shoulders of these few, who need the time that they give for our benefit, for their own rest.

Let me put this question right home to each one of you, sirs, Have you done your duty in this respect? Freely ye have received; have ye as freely given?

It is of no use to say you cannot write. Can you think, or act, or do, or say? Then say it at once. I cannot learn for you; but I can learn something from you. By interchanging our ideas, we get them sharpened, and what's the harm if they do cut close? So much the better.

Interchange ideas with your brother practitioner; discuss the thousand topics (every one of which is almost an untrodden field) whenever you have opportunity. It will give you an insight such as you cannot gain otherwise. And your neighbor and friend (for what are we other than friends) may know something that you do not, as the result of his investigations, and you, in turn, impart to him that something which he may desire to know.

We are none of us too old to learn; and I never meet a professional man, but that I talk with him; and I always feel better for it.

We must study more than we do. Work by day, study by night; and by having a system, and devoting a few hours every day, we will be astonished to know how much we will achieve in a single year.

We must do our duty above all else, contribute our share to the general fund of knowledge. What if every one were silent? Where would our knowledge be? and of what avail would our profession be?

What sort of workers would we be were we closed up within ourselves?

Let the ball roll onward, gathering as it goes; and let us urge ourselves to new endeavors in the field of dental science. Look at the immensity of the sphere that has not been touched upon by any writer. Scarcely any subject has had more than a passing thought, compared with the great unwritten, unsaid. How little has the pathology or physiology of dental science received from pen of the dental writer, and how little has surgery received, where there is so much that is of great importance!

Who, among us, has not had strange cases come under our hands, and from which we could write an instructive article.

And when we meet together to exchange our views, do we come prepared to instruct as well as to receive instruction?

There is not one of us that could not bring something to instruct the whole. But have we done so?

If not, then let us start out on a new track, and make a resolve, that, from this time forward, we will be what the age demands. We will learn what is now unlearned. We will do what we have left undone. Where we have failed, we will now succeed, and where we have destroyed, we will now build up. We will strive to have our operations perfect and successful, and, by study, will be enabled to combat disease, and devote a part of our time to record our labors for future generations. My watchword shall be *I will*; and I will ever remember that "what man has done, man can do."

With such a resolve, well made, and surely kept, we will grow apace. We may be the beacon light to guide some follower over a troublesome passage. We may be benefactors to the human family, and do our duty to the Profession, our Patients, and to Ourselves.—*Dental Register*.

POLISHING.

BY W. H. TRUMAN, D.D.S.

There is, perhaps, nothing which adds so much to the general appearance of anything, as the finish or polish it has received. A fine polish always indicates neatness and care; and if it does not add to utility, increases the value, as it displays the workman's skill.

To the thoughtless man, the finish or final touch to a piece of work, may seem a small thing. There is nothing small,—a pin, trifling as it may appear, has been known to lay the foundation of a fortune,—a spider, once saved the life of a prince,—an unguarded question, by exposing a traitor, saved the infant American Republic.

A piece of work, no matter how well executed, or how much pains has been taken over it, if slighted in the finish, is a botch, and shows a care-

lessness, nothing can cover or excuse. While a case well finished, though it may have defects of construction, at least shows an honest intention.

In our own profession, perhaps more than anywhere else, does this hold good; and gains additional importance from the fact, that carelessness more frequently arises from habit than want of knowledge or skill.

The willing mind, and ready hand, is ever open to grasp and apply knowledge, whenever found; but habitual carelessness is a chronic disorder but seldom remedied or cured.

The thoughtless, whose only care is to get through the greatest amount of work in the shortest time, with the least possible exertion, can never see, in experience, that kind and faithful teacher, from whom the earnest worker learns many valuable lessons. As the little acts of a man's life display his character, so does his constant attention to small points his skill.

To find the crevices of an artificial denture, filled up with the debré from polishing, because so plainly seen and easily remedied, is a far more certain sign of carelessness than an ill-fitting plate, or defective articulation; though generally they all go together—children of the same parent.

The time spent in polishing a plate is never lost. The labor expended upon it will bring its own reward. No matter how trifling the operation, or how small the fee received for it, let nothing escape your hands, while there is a point to be improved, or anything can be added to increase its utility or beauty. Always remember the old proverb: "What is worth doing at all is worth doing well."

Especially should this be observed in mending cases; which (at best an unprofitable part of our business) often come to us anything else but patterns of cleanliness, and on that account are often slighted. It has always been my rule to give them the same care and attention, in polishing, as new work, and am free to say it has always "*paid*." I have had the pleasure of replacing many a worn out case with a new piece of work, solely on this account. Patients, as a rule, look at these small things perhaps more than some operators (to judge from their work) seem to imagine. And a professional man may make or injure his reputation very much by a single act.

To impress this thought upon his class, the great Townsend often remarked to them, "He could tell a good dentist if he saw him sharpen a lead pencil:" if in so simple an affair he displayed neatness, it was safe to presume more important matters would not be neglected. When I see a dentist working with clumsy models, having his tools rusty or scattered in confusion around him, I expect, and seldom fail, to find his work, when done, wasted material. A neatly trimmed cast is a good foundation on which to construct a neatly fitting plate, and this, in turn, may form the base of a successful case. Since the introduction of the vulcanite base, careless workmen have had a wide field to labor in. Requiring, *apparently*, less labor and skill in its manipulations, some seem to have thought it required none.

And many of the faults which have been found with it, are due not so much to the material itself as the miserable botches who have attempted to work it.

The plates are often made extremely thick, the edges left rough and

ragged, and the attempt at polishing worse than all. Some lazy fellows even contending, that the time and labor spent in giving it that exquisite finish it is capable of receiving, is only wasted, because, when worn for a short time it becomes dull and rough.

This is not correct; the apparent roughness is only a deposit upon the plate, and can easily be removed by any of the alkalies, and the polish be found beneath it untouched.

These thoughts were prompted by seeing a piece of rubber work delivered to a dentist, as ready for insertion in the mouth. Although considerable pains had evidently been taken to give a good polish, the plate was left in the condition it came from the flask, upon the palatine surface. The plaster was not brushed off, nor had the whitening been washed from between the teeth. A few minutes would have made it faultless; as it was, the maker had the mortification of having it sent back to him to finish, and his reputation, as a careful workman, suffered accordingly.

To produce a finished piece of work we must commence right. The impression must be correct, the cast made with care, and every stage of the operation FINISHED before the next is commenced. The edges of the plate should be carefully examined, to see they are not rough or sharp, but neatly rounded and smooth, so as not to cut or irritate the mouth; and finally, give the case all the brilliancy and polish the material is capable of receiving, without which all the former labor would be lost.

In regard to the manner or mode of polishing, almost every one has his own peculiar notions; and so long as the results are good, the method of working is unimportant.

In silver and gold, I am in the habit of making the case as smooth as possible with scraper, &c., then using sand-paper, where I can to advantage, and afterwards remove all the scratches with Scotch stone and pulverized pumice stone and water. A tedious operation, but necessary to a fine polish. After which, brush right well with a thick, but not too stiff brush, on the lathe, with pumice stone and oil, (coal oil is superior for this use; works better; easier washed off; does not thicken or turn rancid; leaves no smell or taste; and lastly, but not least, "*cheaper*;") until the marks of the Scotch stone are entirely removed, taking care not to brush too much in one place, as it cuts very rapidly. Follow this with dry rotten stone; and finish gold with rouge, and silver with whiting. Careful washing with warm water after each operation, is absolutely necessary to success. I think whiting, if of good quality and free from grit, gives silver a more brilliant polish than rouge, while rouge imparts a richness to gold, which adds to its beauty.

Rouge gives silver an unpleasant yellow tinge. Old mending cases, when the plate is rough, can be rapidly polished with dry pumice stone and a stiff brush.

In vulcanite work, sand-paper is apt to do mischief, if care is not used to wash off all the fine particles of sand which frequently become imbedded in, or stick upon the surface of the case, and are liable to produce scratches hard to remove. I mostly depend upon a sharp scraper to prepare the case for the lathe. I first use cork and felt wheels, of different sizes, with pumice stone and water, keeping it wet all the time, to prevent overheating, until I get the case smooth, and the scratches removed. The palatine

surface I brush with a stiff brush, and pumice stone and water, until perfectly clean. If tin foil has been used in packing, it can readily be removed with a pickle of equal parts of nitric acid and water, or nitromuriatic acid, (I prefer the first,) taking care not to have it strong enough to act upon the rubber.

In those places which cannot be reached by the wheel, Scotch stone and water, or a skein of thread, one end being held by a nail or in the vice, and saturated with pumice stone and water, can be used to advantage.

After all the pomice stone is washed off, polish with rotten stone and water, with a fine felt wheel, and finish with a clean soft chamois skin and a little whiting, or the ball of the finger, which makes (if its owner has patience enough), the very best instrument to give the final polish to rubber.

I have sometimes followed the rotten stone with a fine brush wheel and dry whiting. The pumice and rotten stone, if faithfully used, with a little touching up with the chamois skin, is all that is *practically* required.

Rouge and alcohol, plaster, whiting, calcined buck-horn, and various other things, have been used with advantage, but the above I have found to be simple, not expensive, and gives as good results as any.

Much depends upon the quality of the material used. They should always be of the best quality. The pumice stone should be that known as "*extra fine*;" all others are entirely too coarse for dental work.

Vulcanite should never be washed in warm water, while polishing; the colder the better. The large corks used for preserve jars make very good polishing wheels, if selected with care, free from hard knots; that known as *velvet cork* is best.

They may be shaped upon the lathe with a sharp knife and sand paper. They cut more rapid, but not so smooth as a felt wheel, which should always follow them.

Water is much better than oil in polishing rubber, as it keeps the work cool, a very important item.

Separate wheels should be used for the different operations; and if once used for a coarse material should never be used for a fine one. It is impossible to free it from every particle of the first used, and scratches would be the result.

GASTRIC ACIDS—THEIR DELETERIOUS INFLUENCE ON THE TEETH.

BY A. C. CASTLE, M D

[Read before the New York Society of Dental Surgeons, January 17, 1866.]

CHEMICALLY good food, it is argued by dental physiologists, offers all the elements necessary for elaborating "pure blood." Pure blood supplies all the material to construct perfect tissues. Perfect tissues constitute the perfect organization of the being—the teeth, of course, included; and there now remains nothing more to complete this state of perfection of the favored one than to migrate to a more favored hemisphere where people do not die. The *physiologist* knows that pure blood is a natural impossibility. While physiological functions may select the purest particles for

the animal structure on the one hand, it is as well known that by the circulating medium of the blood, the organic system offers the *common* sewerage of the animal economy. How perfect teeth may be secured to newly organized beings in uterine transitu, by feeding the maternal system with chemically good food, is now happily elucidated by the research of medical-dental physiologists. All that remains to be done is to *regenerate man*. I ask your attention to the child from its birth to about the eighth year: during this period gastric acids are generated in excess, which all the catch-penny "soothing syrups" and all the carminatives prescribed cannot remove; on the contrary, the *soothing syrups*, the basis of which is opium, are only *intensified* in their poisonous effects by the gastric acids.

If we reflect, we may account for this excess of acidity upon the basis of the vital functions of the whole animal economy being excited by a persistent and extraordinary condition of activity and mobility. The animal system at the earlier periods of life requires a bountiful supply of phosphates, the chief constituent of the animal tissues. Hence children are always hungry, and would be always eating. Chemical analysis demonstrates the maternal milk almost identical with the blood, abounding with the phosphates. Indeed, with correctness, it might be asserted that the difference between milk and blood is in color—the one is white and the other red. Notwithstanding the milk presents the interesting characteristic of ready prepared nutrition, as soon as it is deposited within the stomach of the infant, we find that the gastric acid changes its entire character to promote the assimilation of its phosphates, &c., with the child's blood, for the rapid development of its organization. In the process of this chemical animalization of the chloruets of sodium, calcium, &c., large quantities of gas or *flatus* are set free, which is constantly eructated, or passed with curded milk and acrid acid fluids. During the period of infancy we observe these gastric acids in excess, not only in our own species, but also in the lower grade of animals. As infantile life progresses in developing the growth, the strength, and the perfecting of the tissues of the body, the action of the acids with the phosphates, &c., is more uniform, and the animal chemistry acts in harmony with nature's intention. Hence, as the normal metamorphosis of atoms in the animal economy diminishes the formation of gastric acids, so stomach aches, gripings, spasmodic twitchings, convulsions, spasms, sardonic grins, startings, and the uprolling of the eyeballs, &c., are more remote from each other, until they cease altogether, relieving advanced infancy from gastric and sympathetic cerebral irritations.

It is difficult, nay, impossible, to propose lines of demarcation in the laws of organization and the concomitant nervous sympathies. The functions in the organization of the teeth, implicating as they do the fifth pair of nerves and the sympathetic ganglia, no doubt present a great, if not the chief cause producing the distressing symptoms affecting and afflicting *the period of dentition*. At the same time the most ordinary observation will be ample to satisfy our minds that gastric acids materially assist in intensifying the nervous irritability of the infantile system. Without a knowledge of the *cause*, every mother observes the effects in acidified or scalding urine, excoriating the infant's flesh, and acrid acidified discharges from the bowels, irritating and inflaming the natural outlet of the body.

The excess of acid in the infantile state is negatively demonstrated by the absence of "tartar" from children's teeth under ten years of age. In place of *salivary calculus*, we find an *acid dark-green acidified slime* collected upon, corroding and eating into the surfaces and necks of the teeth, causing tenderness, with irritative fever, teethache, earache, and neuralgic symptoms, where the branches of the fifth pair of nerves extend into the scalp. This acidified green slimy deposit, securing a hold upon the permanent teeth—making their eruption through the gums—too often furnishes the foundation for very many dental troubles, vexing maturity and after-life.

The next acid diathesis, to which I would call your attention, we find demonstrated in consumptive patients. Nutrition being inharmonious, gastric phosphoric acid is set free; the bones and softer tissues forming a delicate structure of the whole system. Like the deciduous teeth of infantile organization, the teeth of consumptive or strumous habits of body are little better than solidified ossified gelatine, presenting closely the same physical characteristics; and, like the infantile teeth, are eaten into by the green acidified slime. These gelatinous teeth of phthisical or strumous diathesis are corroded and eaten into by gastric phosphoric acid with the same distressing symptoms affecting and attending dentition, with fever and neuralgic paroxysms. In complicated cases of disease, several acids are eliminated from the stomach, the mucous membrane of the bronchiæ, throat, and the mouth. In these we observe a heterogeneous mixture of opposing chemical elements, acting and reacting upon each other. In such cases, we find a mixed, filthy, mucous, slimy, sandy, animal compost, forming a soft, greasy "tartar," covered with saliva, and saturated with pus: the mass of matter presenting a fit type of the condition of the system.

The next gastric acid diathesis, to which I now ask your attention, exists during the period of *gestation* and *lactation*. An enormous quantity of blood, as you know, is conveyed to the matrix, carrying the phosphates and other material of nutrition taken in the food by the mother, and, in addition to which, even the substance—phosphates, if you please—of the maternal system is often drawn upon for the organization of the foetus. This drain upon the maternal economy sets free the gastric acid in large excess during the period of pregnancy and nursing. Hence the concomitant sympathies, "morning sickness," "heartburn," "depraved appetite," &c. Hence the affinity of peculiar gastric acid with the lime of the teeth; and others affecting the necks of the teeth only; the former decomposing, and the latter rendering them tender and odontalgic with remote neuralgic sympathetic pains. Hence little salivary calculus is deposited on the teeth under these circumstances. Hence we find the existence of the same order of action in the economy during the period of nursing. Nutrition, now, is directed from the matrix to the mammary gland for the formation and secretion of milk. In many instances the milk is deficient in phosphates, but holding lactic acid in excess. Hence the mother is said to have "bad milk;" the infant receives no nutrition, and sinks under *marasmus*. *Mental*, as well as the non-chemical, animalization of the milk produce the same results. *Lactic acid* acts upon the liver, and produces those *green discharges* from the bowels, the *acid*

urine, and many symptoms attributed to "teething," of which children too often die.

Peculiar acid diatheses are present in "dyspeptic" derangements. At different periods of this affection, several distinct acids are generated, interfering with the functions of digestion; sympathizing with the stomach, the mucous membrane of the mouth also eliminates its acids—all combining to destroy the dental organs. The first distressing symptoms affecting the sufferer are the acute pains on the line of the necks of the teeth, and along the ridges of the dento-maxillary gums and *alveoli*, by the contact of cake, confectionery, sugar, molasses, &c.

The gastric acid eliminations of dyspeptic stomachs whose functions are occasionally or periodically affected with "fits" of indigestion vary according to the different constitutions, habits and temperaments of individuals.

The principal acids evolved from the digestive organs of the differently influenced constitutions and temperaments, severally, are phosphoric, lactic, oxalic, sulphuric, chloric, and (sometimes) acetic acids—which, with carbonic acid gas, and sulphuretted hydrogen gas, evolved from the lungs, all chemically act upon the enamel and bone of the teeth.

In consumptive persons, where disease is in full force, and the lungs more or less destroyed (and even in those whose lungs are affected with congestions of the membranes), chloride of sodium or salt is found in excess in the mucous secretion. Of the action of the gastric acids upon the substance of the teeth, every *practical* dentist knows *the effect*—if he do not comprehend or understand *the cause*. The first impression the acids make is seen upon the line of the ridges of the gums, embracing the necks of the teeth, which exhibit either signs of congestion slightly puffed, or flaccid jelly-like everted edges hanging loosely about the teeth.

The action of table salt, cakes, sweetmeats, &c., causes acute pain, both in the substance of the teeth, but more acutely on the irritated peristeme exposed upon their necks; the substance of the teeth is gradually softened or decomposed; in many instances the enamel presents its appearance perfectly white, as if calcined by the action of fire, crumbling and friable ("white decay"), and easily broken down. Other teeth, on the contrary, present a mass of softened bone within the broken enamel, similar in appearance to softened gutta percha or macerated chamois leather. In some persons these teeth crumble away without superinducing pain or uneasiness; others, again, suffer all the tortures of neuralgic sympathetic pains in the head, jaws, face, eyes, temples, neck, arms, &c.

Gastric acids play their parts with uniform order upon different localities of the faces of the several described teeth. I have observed *four* general groups of teeth presenting, by the classification I have made, modifications in their connection with, and *significant* of the *physical* ancestral and constitutional diathesis, or peculiar "habit" of body, and the pathological predisposition of each particular individual, viz.:

First.—The large, firm, dense, yellow teeth.

Second.—The dense, yellowish-white teeth.

Third.—The *opaque*, chalky white; the *transparent*, yellow white; and the *opaque*, *yellow*, *chalky* teeth.

Fourth.—The transparent, glassy, chalk white; the transparent yellow, and the *pearly*, *bluish-white*, *translucent* teeth.

In the *third* and *fourth* groups the dentist frequently meets with deep pits, often in connection with longitudinal furrows or indentations—the teeth being singularly *serrated* on their cutting edges. Sometimes these furrowed indentations, and even the serrated points, present perfect isolated deposits of lime, without animal matter forming a natural chemical constituent. On inquiry, we discover that the possessors of these teeth are the children of strumous or consumptive parentage; and that in the eruptive cutaneous diseases, measles, scarlet fever, small-pox, &c., during infancy, in some we find an alkaline, while in others an acid diathesis exists during the period of the eruptive disease; hence we find their *marks* made at these periods of the nutritive process upon the disturbed organization of the teeth.

Gastric acids are influenced by a certain law or order of action; being generated in accordance with the peculiar constitutional diathesis of each individual; they also appear to act upon the teeth, guided by certain laws. Every dentist will admit that, as a general rule, they make their selections on certain portions or parts of the teeth in different individuals. Dr. J. M. McCormick, a distinguished surgeon in the British army, in the *Transactions of the Medical and Physical Society and Journal of Calcutta*, cites numerous interesting cases of affections of the teeth, wherein bad diet produced gastric acids which caused dental irritations. He says: “Under these circumstances, the gums invariably presented a pulpy, spongy, hemorrhagic, and vegetating surface; in many instances the teeth perpendicularly split in two.”

No doubt all of you, gentlemen, have observed, as I have in my practice, that the teeth of group No. 1—the large, dense, yellow teeth—are met with in those persons *only* who possess a solid, vigorous constitution, a firmly knitted frame, generally large boned, with splendid muscular development, nervous strength, and superior powers of endurance.

The second group—the dense, yellowish-white teeth—represent these constitutional marks in a lesser degree. The bones are smaller, the muscles not so markedly developed in outline; the limbs are rounded, and the eyes and features present a softer character or expression; and although the physical strength and power of endurance are not so great as those possessing the first group, they, nevertheless, enjoy general good health.

The third group—the opaque, chalky-white teeth, the transparent, yellow-white teeth, and the opaque, yellow chalky teeth—present the index of bones with less phosphates and more animal constituents, with softer and more delicate muscular formation, and repletion of cellular tissue. The habit of body is more or less strumous, tuberculous, and predisposed to cachexy.

The fourth group—the transparent, glassy, chalk white, the transparent yellow, and the pearly, bluish-white translucent teeth—the theme of poets, the song of the lover, the *desideratum* of beauty, woman's envy, bespeak for their unhappy possessors a watery blood, a sero-lymphatic temperament, deficient constitutional stamina; weakly, chlorotic and impressible by the slightest changes and most trifling influences or causes. Predisposed to anæmic conditions, to strumous disorganizations of the tissues, and constantly in danger of pulmonary consumption or glandular disorders.

Thus the dentist can demonstrate the marked difference of constitutions in man by the physical densities of the various grouping or classification of the teeth. As obdurate granite represents the solid foundation of the earth, by way of illustration it may represent group No. 1 teeth. So the yielding alabaster may represent the softer densities of groups three and four of dental frailty. Every dental practitioner must have noticed the force called into requisition to dislodge a tooth from the jaw of group one, in comparison to the ease with which he extracts teeth of the third and fourth groups; how frequently the soft *gelatinous* alveolus is brought away adherent with the latter.

The gastric acids act with distinguishing marks upon the several groups, in accordance with their density. I shall not detain you by dwelling upon these, but incidentally refer to the action of gastric and buccal acids upon the first—the dense, firm, yellow teeth. Because these are the best constructed of the dental family; because upon them and their surrounding tissues, we observe the peculiar action of the acids; they do not corrode or eat away the substance of the teeth; they simply denude the teeth of their alkaline protection; like sand, they appear merely to aid friction, and hence the wearing down of the crowns of the teeth. Thus by constant attrition, we see the teeth worn on a level with the gums. Where oxalic acid is present, we find the same action with the additional irritation made upon the margin of the gums, causing them to recede from their adhesion to the necks of the teeth; in the latter, often we meet with deep, smooth grooves, as if the friction of a sharp cord, by constantly passing over them, had worn the grooved indentation into the necks of the teeth. Sometimes this grooving progresses to a sufficient extent to cause the teeth to break off. The receding of the gums, however, most generally continues until the teeth one after another fall from their supports, depriving the animal economy of their services. Those hard, semilunar circles of dark-green salivary calculus, embracing the necks of these teeth immediately beneath the edge of the gums, is an oxalate. The instrument detaches it with a sharp, clicking sound, often requiring considerable force to detach it from its adhesion. This salivary calculus is very destructive to the teeth. It is rarely met with on the other classes of teeth; it gradually insinuates between the periosteum and the bony tissue, *eating* its hold into the fangs, superinducing the absorption of the alveoli and the gums, while it gradually causes the atrophy and then the death of the teeth. In this manner they are rendered extraneous, as it were, to the animal economy, and they fall from the jaws.

Most remarkable it is, that these adamant bone constructed teeth, which to our conception, from their extreme density of structure would appear to possess the least vitality compared with the other named groups, which are constituted with more animal organic constituents, possess not only more vitality, but most wonderful vital principles, powers and *internal* restorative resources (which are rarely met with in other classifications of the dental organs). Although they do not possess the power entirely to combat the onslaughts of their antagonisms and maintain their integrity complete, they are still endowed with sufficient organic vitality to prevent their disorganization or decay.

[To be continued.]

ODONTOGRAPHIC SOCIETY.

ETHER SPRAY.

At the May meeting of the Odontographic Society, a communication was received from Dr. Wm. H. Waite, of Liverpool, England, in which he called attention to the apparatus of Dr. Richardson, for producing local anæsthesia, by means of ether vapor, or, more properly, ether spray. At a meeting of the Odontological Society, held February 25th, Dr. Richardson introduced to the members an improved spray producer, with a double jet. This apparatus was sent to the Odontographic Society by Dr. Waite. It consists of a bottle for holding the ether. Through a perforated cork, two tubes are inserted, one within the other; the inner one running to the bottom of the bottle. Above the cork, a little tube, connected with an India-rubber ball hand bellows, communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube, for delivering the ether, runs upwards nearly to the extremity of the outer one. When the bellows are worked, a double current of air is produced, one descending and forcing the ether up the inner tube, and another ascending and playing upon the ether, as it escapes from the tube, and passes through the jets. It is necessary to use pure rectified ether, since the ether of shops prevents perfect anæsthesia, on account of its containing too much alcohol. This apparatus will produce a degree of cold six degrees below zero, and will freeze the gum within one minute, arresting sensation between the tooth and the sensorium, so that the tooth can be painlessly extracted. The same effect is produced as by Mr. Arnot's method of ice and salt, without the inconvenience of preparation and application.

Dr. Richardson has applied the jet to the mucous membrane of his own eye, after first chilling the ball with the lid closed. The first subject for teeth extraction, by the ether spray, was a lady who required five front teeth extracted. The operation was performed on the 11th of December, 1865. The lady had previously inhaled chloroform, but it produced so much irregularity in the action of the heart, and other disagreeable symptoms, that Dr. Richardson determined to give the local measure a trial. The extraction was performed by Mr. Peter Matthews. The ether spray was directed first at a distance, then directly over the gum. At the end of fifty seconds the gum had become as white as the tooth itself, and quite insensible. The spray was then directed upon the tooth, for twenty or thirty seconds more, and then extracted. In this manner all the teeth were extracted. Not a drop of blood was lost; there was no painful reaction; and the healing process proceeded perfectly. In two of the extractions the patient felt nothing. In one it seemed as though the jaw

altogether was being pulled downward, but without pain. In another, she was conscious of a kind of wrench, or loosening, but without pain, and that the introduction of the lever was attended with a momentary dull ache. On the whole, the process was quite as painless as when she took chloroform. This operation was not performed with the improved apparatus; ice and salt being used to reduce the ether to zero, instead of the hand bellows. The fine jet in this apparatus became blocked up with a portion of ice, throwing it out of play; besides, it was found too cumbersome for practical purposes; having also the same objection as Arnot's method, that of preparing the ice and salt. This led to the invention and adoption of the improved apparatus worked by the hand bellows.

It is said that there is no danger of sloughing of the gums, when frozen in this manner. Two of the principal objections to the ice and salt method were, 1st. The time required in preparing the ice and salt; and 2d. Sloughing of the gums. Since we are rid of these objections in local anæsthesia, by ether spray, it bids fair, in time, to be used extensively in dental practice.

At the same meeting, a communication was read from Mr. Tomes, expressing himself gratified at being elected a member of the Society, and giving several instances of the successful treatment of irregularity by torsion. Mr. Tomes presented his photograph to the Society. On motion, it was ordered to be framed in an appropriate manner.

It being the annual meeting, the following officers were chosen:—

President.—DR. HARRIS.

Vice Presidents.—DRS. FLAGG and SUESSEROT.

Corresponding Secretary.—DR. MCQUILLEN.

Recording Secretary.—DR. STELLWAGEN.

Executive Committee.—DRS. HENRY, TEES and ELLIS.

ELDERBERRY SYRUP.

The berries of the elder bush (*Sambucus Canadensis*), which ripen about the middle of August, are used extensively by the people of this country, in making syrups and wines for medicinal purposes. Their virtues have been extolled by many, and one more enthusiastic than the rest, has remarked, that "every time a person passes an elder bush he should make a salam." They have a sweet and acidulous taste, very agreeable to many.

A syrup is made from the expressed juice of the berries. They are bruised and strained. One pound of crushed sugar is added to every pint of juice, and then boiled for forty minutes; it is then sealed in jars, for future use. This is very useful in fevers, and with pounded ice, is very

refreshing to a sick person. It is highly valued by many housewives, for its efficacy in the cure of sore throat. Its virtues here, no doubt, lay more in its diaphoretic and aperient properties, than in any astringency it may possess, the bark being more astringent than the berries. For this purpose, it is prescribed as follows:—

R. Elderberry Syrup, $\mathfrak{Z}\text{v}$.

Honey, $\mathfrak{Z}\text{i}$.

Salt Prunel, gr. i.

A teaspoonful to be taken occasionally.

Elderberry syrup is interesting to dentists, as being useful in compounding gum washes. We have found it an excellent substitute for cochineal, surpassing it in the beautiful crimson color which it imparts, and possessing a far more pleasant flavor. The following we have found to be an excellent wash:—

R. Elderberry Syrup,

Tincture of Myrrh,

Tincture of Cinnamon,

Tincture of White Oak Bark,

(of each, $\mathfrak{Z}\text{i}$.)

Flavor with Oil of Rose.

The juice, when fermented, makes a very pleasant and wholesome drink, and is becoming one of our most highly-prized domestic wines.

It is made as follows:—Take three pints of the expressed juice, two quarts of water, and two pounds of sugar; boil half an hour, and skim during the boiling; put in bottles, with the cork out, and let it stand for two weeks, until done fermenting; then cork tight and keep in a cool place.

A. T.

Obituary.

DROWNED, in the St. John's river, Florida, on the 4th of April, D. C. Ambler, M.D., Dentist.

It is our sad duty to record the sudden death of this highly respected and beloved member of our profession. For the last few years he has been residing in Florida, but practiced for many years in the City of New York. While there, his circle of acquaintances was large, and men of education, refinement and worth, were numbered among his most intimate friends. Like all good and useful men, he had a few enemies, but these were chiefly, if not solely, members of the profession, envious of his reputation and success.

He was a favorite pupil of the venerable Dr. Valentine Mott, and graduated at the College of Physicians and Surgeons of the City of New

York. His love of mechanics and chemistry, aided by an inventive and fertile mind, enabled him to make rapid advances in Dental Surgery, which he chose as a specialty. He was awarded a gold medal in the year 1833, by the American Institute, for artificial porcelain teeth; the first, we believe, awarded for any manufacture. He thus gave an impetus to this important branch of dentistry, the growth of which has been so rapid that it has become a business of itself, giving employment daily to hundreds of busy hands.

Sickness in his family called him away from this field of usefulness, to another in the Sunny South, leaving to others the laurels and riches which he truly merited. We understand that the Union had few more earnest supporters than Dr. Ambler, who, in common with other loyal men of that region, suffered many privations during the late war.

We had the pleasure of meeting him last fall, in New York City, to which place he was on a visit from Jacksonville. On that occasion he entertained us with an account of the many difficulties encountered by the early plodders in the field of dental surgery,—giving a history of his travels through the South, with a few incidents in the practice in this country of the now famed Dr. Brewster, and others contemporaneous with him. We little thought then, that it would be the last time we should ever look upon his pleasant and genial face—the last time we should ever listen to his cheerful and instructive conversation. Truly, “in the midst of life we are in death.” He was a sincere Christian, a member and communicant of the Protestant Episcopal Church. Those whom he has left behind mourn for him not as those without hope. Having finished his course in faith, he now rests from his labors.

We append the following preamble and resolutions, adopted at a meeting of the Society of Dental Surgeons of the City of New York, held at their room, No. 24 Cooper Union, on the evening of the 25th of April, 1866.

The death of D. C. Ambler, M.D., Dentist, was announced to the meeting, when, on motion, a committee of three was appointed by the chair, to draft suitable resolutions of the exemplary character and excellent professional worth of the deceased.

The unexpected close of an eventful life, in a career of enterprise and usefulness, cannot fail to arrest the attention of the most thoughtless, and shroud an appreciative community in the deepest gloom. Such was signally the case, when the startling intelligence of the sudden death of Dr. D. C. Ambler, by drowning, on the 4th of April, in the St. John's river, Florida, reached us.

In Dr. Ambler we recognized an old familiar friend and professional brother, whom we all delighted to honor while living, and now sincerely mourn his death. Dr. Ambler was one of the pioneers in the profession

of dentistry, and one who labored hard to elevate the standard of professional excellence; and the science and art of dentistry was materially advanced by his scientific knowledge and ingenuity; and to his experimental researches is our profession indebted for those improvements in mineral teeth, the manufacture of which has been carried on so extensively, and with such perfection in this country: therefore, be it

Resolved, That we show our affection for his many virtues, and appreciation of the bright example of our departed friend and brother, by placing on record these expressions of our bereavement and sorrow for his departed worth.

Resolved, That our sympathies, true and heartfelt, are hereby tendered to the relatives and friends of the deceased, in this sad and inscrutable dispensation of Providence.

Resolved, That Dr. John Gardner Ambler, one of our members, and a nephew of the deceased, be requested to address the profession, at such time and place as may be convenient to himself, in an obituary or eulogy of the deceased.

Resolved, That these proceedings be published in one or more daily papers of this city, and in the dental journals.

All of which is respectfully submitted.

T. H. BURRAS,
JOHN ALLEN,
CHAUNCY F. FITCH,
Committee.

VARIETIES.

DENTISTS have one sure crop.—Sore-gum.

THE toothache, smoke, a cough, and a tight boot, are things which cannot possibly be kept secret very long.

A WIDOW, mourning over the body of her husband, sobbed:—"It is too bad, his teeth are as good as they ever were."

PROFESSOR SIMPSON, of Edinburgh, states that Messrs. Duncan, Flockart & Co., of that city, now make upwards of 7000 doses of chloroform every day, counting two drachms as a full dose, or nearly 2,500,000 doses, equal to 4,875 gallons in a year.

A WHITE metal is found in California, which has lately been ascertained to be platina. It sells there for six dollars an ounce, and is used for tipping gold pens, with what are called "diamond points," for which purpose about four hundred ounces are annually exported from San Francisco.

THE best fusible metal heretofore used, has been composed of two parts of bismuth, one of tin, and one of lead, and its melting point was 169 degrees Fahrenheit. It has been discovered, however, that a metal composed of four parts of cadmium, and five each of bismuth, tin and lead, will melt at 118 degrees.

THE manufacture of false eyes is a thriving business in Paris. Four hundred a week are sold, and the twelve establishments in the business employ 240 workmen. For poor people there are second-hand eyes, which have been worn for a few months, by eyeless nobles, and then exchanged for new ones.

GLYCERINE is now used to extract perfumes from various flowers, by putting the flowers in a stoppered bottle, and leaving them there for three or four weeks. It also extracts a valuable hair dye from red pepper balls, more strengthening and less dangerous than the preparation of cantharides now in use.

THE weight of a cubic inch of gold is about twelve ounces, and of a cubic foot of gold 1203 pounds, avordupois. All the fine gold produced during the last eighteen years weighed about 11,084,000 pounds, and would occupy but 9,213½ cubic feet. A solid shaft, 92 feet high and 10 feet square, would represent the amount; and if melted, it could be contained in 1094 hogsheads, of 63 gallons each.

To drill glass or porcelain, place a drop of spirits of turpentine on the spot where the perforation is to be made, and in the centre of this put a small piece of camphor, then perforate with a well tempered drill.

To take rust out of steel, cover the steel with sweet oil, well rubbed on it, and in forty-eight hours use unslacked lime, finely powdered, and rub until all the rust disappears.

A CURIOUS circumstance lately occurred in France, relative to the skulls of two famous saints, Mansuy and Gerard, formerly bishops of Toul. The two heads had been preserved in the same reliquary, and as the labels had fallen off there seems no means of distinguishing one from the other. In the difficulty, Mgr. Lavigerie, Bishop of Nancy, requested M. Godron, known as an ethnologist, to examine them. That savant immediately recognized one of the heads as that of a Gaul, while the other evidently belonged to a man of a different nation. The distinction was confirmed by the fact that St. Gerard was of Gallic origin, and St. Mansuy a Scotchman. Likewise, the presence of four teeth in the skull of the latter, a circumstance afterward found to be mentioned in one of the labels, fully established his identity.

STEEP isinglass twenty-four hours in common white brandy, then gently boil, and keep stirring until the composition is well mixed, and a drop, if cooled, will become a strong jelly. Then strain it through a clean linen cloth, into a vessel to be kept closely stopped. A gentle heat will dissolve this glue into a colorless fluid. Dishes of wood, glass, or earthen, if united with this cement, will break elsewhere, rather than separate in the old break. In applying the cement, rub the edges which are to be united, then place them together, and hold them together for two minutes, and the work is done.

A HARD stone, that may in some respects take the place of Arkansas stone, can be made by mixing 24 parts of coarsely powdered lithographic stone, 4 parts of borax, 1 part of saltpetre, and 4 parts of very fine emery. This is subjected to a pressure of twenty tons to a square inch, and then heated to a white heat. Cutting or polishing wheels may be made in this way, cheaper than they can be cut out of hard stone.

THE DENTAL QUARTERLY.

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No. 3.

FILLING FANGS WITH GOLD FANG WIRE.

IN a late number of the "Quarterly," we referred to the inestimable value of the nerve broach, in the treatment of both the incipient and advanced stages of alveolar abscess. By its use, relieving pain almost instantaneously, and curing the diseased action in a trifling period of time; besides avoiding all liability of necrosis of the tooth or alveolus, the result sometimes of inflammation of the dental periosteum when favored by any constitutional vice. Thus saving hundreds of valuable teeth without the endurance of one-fiftieth part of the pain attending or resulting from extraction, or the fortnight agonies consequent upon leaving the parts to work their own cure or destruction, as the case may be.

Appreciating the curative powers of creasote in arresting morbid excretions, and restoring the parts to a healthy state, after cleaning out the pulp cavity and pressing the nerve broach to the point of the fang, thus relieving the canal of the accumulated mephitic gas, it was our habit to insert a small pledget of cotton moistened in creasote, and force it to the extreme point of the fang so as to come in contact with the pyrogenic sac. This, in the majority of cases was a difficult task, and there is no doubt whatever that in a great many instances the pledgets failed to reach their destined places. The cotton was very easily carried to the point of the fang on a fine nerve broach, but in withdrawing the broach it was a matter of uncertainty whether the application remained there. Another tedious task was the removal of the cotton at a future sitting.

To obviate these difficulties, we at first used broken broaches, twisting a small piece of cotton around the point, dipping it in creasote, and passing it to the apex of the fang, allowing a small portion to project into the cavity of the crown. The wire is cut the right length before commencing the operation. This was then sealed well with wax and allowed to remain

in a day or two or until all inflammation and swelling had subsided. We considered these broken broaches objectionable, and afterwards substituted fine gold wire, made by cutting small square strips of eighteen karat gold, about No. 30, and filing them into wire of the desired size. This we consider a safe, easy and certain way of introducing the cotton moistened in creasote.

We had been in the habit of introducing pledgets of cotton and creasote in fang fillings, allowing them to remain at the extreme points of the nerve canals and filling over them. This practice, we believe, now generally prevails among those well posted in Dental Institutes. The same difficulty of course is experienced here in getting the pledget to the desired point. Being satisfied that the gold wire would be the best means of accomplishing this object, we commenced using it in fang filling. The wire for each fang is made of sufficient length to extend to its apex from the opening of the pulp cavity. On one point a screw thread is filed, and the other end is bent sufficiently hook-shaped to allow of easy withdrawal if necessary at any future time. This can be done by passing a properly shaped excavator through the little hook and drawing the wire out. It is very seldom, however, that this is required to be done. If there should be any interstice between the wire and walls of the canal, it can be filled up with gold or Hill's stopping. If this interstice, however, is very narrow, it need not be filled at all, since the vapor of creasote will occupy the space and prevent any evil effect. The pulp and crown cavity are then to be filled in the ordinary manner with any material desired. The nerve canal should be syringed out with tepid water and dried by means of a nerve broach and cotton. We have presented our readers with this brief description of our method of filling fangs, knowing that if they try it once, they will consider it equal to the old method, which to be done right, requires very delicate instruments and occupies a great deal of time, which to a dentist of a large practice is no trifling matter. It is the duty of the dental surgeon to practice celerity as well as dexterity, and thus avoid fatiguing both the patient and himself, retaining strength enough to do his work thoroughly. A. T.

Do not remove your flask from the vulcanizing oven, or open it until it is perfectly cold. More teeth are cracked in this manner than any other. The reason is obvious. All rubbers after vulcanizing will shrink more or less in cooling. And although all bodies expand by heat and contract by cold, still this principle is evolved in so minute a degree in porcelain as to warrant us saying that the teeth do not vary at all. Consequently during the shrinkage of the rubber in the process of cooling as the particles adjust themselves to their proper place, there must necessarily be a considerable

strain upon the tooth. Particularly is this the case if the rubber extends above the gum or laps over it. If this pressure is sudden—as must be the case when the flask is removed or opened while warm and brought into contact with a colder atmosphere—the porcelain is apt to give way to it and crack. If it is gradual, as it would be if allowed to cool slowly in the oven, its damaging power is reduced ten to one.

We have several times seen cases taken from the flask warm, sound, and whole; laid upon the table, and in twenty minutes cracks would be plainly visible, but we have never seen a case taken from the flask *cold* and perfect, that did not remain so.

RELATIVE SIZE OF NATURAL AND ARTIFICIAL TEETH.

To the Editors of the Dental Quarterly.

Messrs. Editors:—Allow me space to make one or two practical suggestions in reference to a matter of considerable importance to the dental practitioner and patient.

It is a common and serious complaint that, where full upper sets are inserted, it is almost impossible to prevent the bicuspid from being too prominently exhibited when the patient speaks or smiles. It is difficult, and in the present manner of arranging the teeth almost impossible to get the “grinders” *back* of the “cutting” teeth in the position they should occupy, in order to make the artificial teeth proper representatives of the natural ones. Every dentist of six months experience has had painful confirmation of the correctness of our statement. We will, however, illustrate it by a common case:—Two young ladies stand before you. Miss A. has her natural teeth. She smiles, sings, laughs,—you observe that she hardly (even when her lips are expanded) shows more than the centrals, laterals, and the points of the canines, the bicuspid being rarely seen. The cutting teeth occupying their *natural* positions in the beautiful arch are alone intruded upon the sight. Regular and pleasing her mouth does not look like that of a she Cerberus! Her teeth look like pearls wet with dew. No carnivora there. She seems to belong to the fruit eating and granivorous age of innocence, so quaintly told in the old English couplet—

“When Adam delved, and Eve span,
The Farmer was the Gentleman.”

Now turn to Miss B., at her side, who has had her natural teeth replaced by artificial substitutes. As soon as she speaks, sings, or smiles, she almost invariably shows the centrals, laterals, canines, and two bicuspid on each side—*ten teeth* by actual and most painful count! Now this mouthful of porcelain is not pleasant to look upon. The teeth may be well formed and shaded, and the arrangement in rubber, blocks, or plate may be good, but this mouth contains more teeth than it should, apparently. It is an eyesore. By a comparison of natural and artificial dentures, it will be found that the natural teeth are nearly one-third wider than the artificial. If we go to the manufacturers to select a set of the same size identically as those

which the patient has lost, we discover, that, though no larger than a handsome tooth in the mouth of a young lady, yet in manufacturer's language, we are asking for a "large size," "size for a man," &c. &c. Now, what do we suggest as a preventive of this ghastly showing of the bicuspid and molars? We answer—*insert larger, or a least wider centrals, laterals, and canines.* The reasons for this are palpable, and twofold,—the bicuspid will be forced further back in the jaw where they belong: and they can be placed at a greater angle with the cutting teeth, and immediately, so to speak, *behind* them, out of sight.

I am aware that at this point we are met by two annoying difficulties. The first is occasioned by the shrinkage of the alveolar process, which allows the upper lip to fall in more, just where the roots of the canine teeth were extracted, than immediately over the spaces occupied by the incisors, changing the shape of the mouth from a slightly flattened arc of a circle to an obtuse angle. The reason of this greater absorption of the jaw at this point may be found in the fact that the roots of the canines are larger and more prominent than the roots of the centrals and laterals, and when extracted leave a larger space to be filled up by the artificial denture. Now, instead of fitting the blocks (if the case is for rubber work) to this shrunken and ill-shaped jaw, why not make the case as nearly the shape of the jaw in its normal and healthy condition as possible? This may be done by placing the canine teeth in their proper place, filling the space of the absorbed alveolar with rubber, or having the body of the teeth and the gum made thick enough to answer the purpose. The cheeks and lips will then resume the shape given them before the loss of the teeth.

The other difficulty is, that the patient is made aware that the lip is slightly distended, and to his (or her) imagination made to protrude, or "stick out" as the phrase is. The dentist is desired to "put the teeth in farther;" he is told "they don't feel right somehow;" "they push my lip out too much," &c. If the patient can only be induced to wear the teeth a few days, this unpleasant feeling of fullness will entirely disappear, and she will rejoice in a fair, plump rotundity of face, pleasant to look upon.

If the plan we so strongly urge be pursued, and the dentist allowed to use his own judgment instead of yielding to the will of the patient, the bicuspid will be hidden as well in the artificial as in the natural cases, and the terrible dread which so many of our lady patients exhibit of having their teeth too big, be dispelled. We must prove to them, by comparison, that they are of the size demanded by nature, and those detested little incisors be driven from the market. My design in this hasty note is, to excite thought and remark on this subject by the many able and accomplished dentists who read and contribute to your magazine.

Respectfully,

G. R.

Philadelphia, August, 1866.

GASTRIC ACIDS—THEIR DELETERIOUS INFLUENCE ON THE TEETH.

BY A. C. CASTLE, M.D.

[Read before the New York Society of Dental Surgeons, January 17, 1866.]

[CONCLUDED.]

As the crowns of these teeth are worn down by the mechanical attrition of masticating the food, which is materially aided and increased by the acids I have mentioned, the internal blood-vessels, the nerve pulps and their nerve branches connecting them with the main nerve, RECEDE, *pari passu*, with the wearing away of the teeth. In many instances, so rapidly do the acids avail themselves of the abraded surfaces, that the teeth are rendered exceedingly, and acutely sensitive, where deep concave indentations are formed by the action of the acids. The internal blood-vessels, nerves, etc. of these teeth, then, being superexcited and stimulated into action by the irritating effects of the atmosphere, gastric and buccal acids results in the secretion of, and pouring out and depositing into the *tubuli* or porosity of the crown of the abraded teeth a *transparent amber-like ossific matter*, which is contradistinguished from the true bone of the teeth by its physical and chemical characteristics; and which, being secreted *within the teeth by the dental secreting vessels*, presents the *dentine proper*. The tissue of the organized bone of the teeth is no more *dentine* than the bones of the crania are *cranine*; or the nasal bones are *nasaline*; or the tusks of the elephant or hippopotamus are *tuskine*. This peculiar secreted *dentine* is freely poured into the *tubuli* of the bone of the teeth, to replace its loss from attrition. As I have already observed, in many instances, the wearing away of the teeth is so rapid* that the nerves and blood-vessels of the dental chambers do not recede in the equal proportion necessarily demanded of them to escape the action of external agents: hence their increased sensibility;† hence the sympathetic, periodic, or chronic nervous headaches; hence neuralgic sympathies in the face, the ears, the eyeballs, the temples, the head, the neck, or shoulders, either separately or combined, often sympathetically affecting the whole nervous system, and posing too often the ignorance of medical practitioners who, unaware of these sympathetic and symptomatic symptoms of the superexcitement of the dental nerves from these external causes, irritating the dental economy, treat their patients for idiopathic neuralgic, rheumatic, and their attendant affections. It is in the cases to which I now *particularly* refer and ask your attention that *hypertrophy* of the fangs of the teeth is mostly to be observed. We have a right to the inference that*the rapid secretion of the dentine being prevented from depositing itself where it was intended to

* This process and action of gastric acids may be seen more completely on the teeth of sailors, who live on "hard tack" and *salted* provisions, which largely increase the formation of gastric acids, which, in their turn, aid in the attrition of the teeth.

† The teeth of horses are peculiarly affected in this manner. Many of these noble animals, otherwise in high condition of perfectness, are disposed of at a great sacrifice because their "*teeth are tender*." They cannot eat their food; consequently they lose flesh, muscle, and strength. Veterinary surgeons, whom I have taught to treat these cases, now readily overcome this difficulty, thereby saving many valuable animals to their owners.

replace the loss of the substance of the teeth by acids and attrition, the secretion seeks other localities, and we find it on the "*hypertrophied*" fangs. To this hypertrophy, the result, not the cause, the best learned and most experienced dentists attribute all the painful symptoms distressing the patients; and for which they propose many "heroic"—I need not say—futile treatments.

The secretion of the dentine continuing, the nerves and blood-vessels still recede before the wearing down of the teeth, until finally the nerve-chambers themselves are completely filled by its deposit; and thus by their own action, the nerve and blood-vessels are obliterated from the dental economy; and now what remains of these originally adamant bones and perfectly organized teeth, are the semi-transparent, shrunken, or atrophied apologies for dental organs.* These vital organics being thus obliterated from within the teeth and the *dentine* now filling in the tubuli of the bone, reduces their vital resistance to a condition as to permit the action of the dental absorbents upon their remaining substance; the *original bone* is gradually absorbed, leaving the amber-like deposited dentine to occupy its place—the "mere oblivion" of the teeth, in the state of '*atrophy*', we find them. This natural process, no doubt, harmonizes with nature's intention in common with the gradual decay accompanying old age.

* * * "Last scene of all,
Is second childhood, and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything."

This synopsis of my observations upon the acid diatheses, from infancy to age, from first "the puling infant" to the "last scene of all," may afford you some hints to aid your endeavors, as well as mine, further to elucidate the action and influence of gastric acids upon the health, upon the integrity of the dental organs, and hence upon the happiness of our fellow-beings. I have availed myself of the resources of the *materia medica*, with marked success; and if my efforts in prophylactic and curative treatment have been crowned with no other success, it will ever remain a source of pride that I discovered the means for the immediate obtunding of sensibility in the substance of the teeth, thereby permitting the direct manipulation of the dentist to prepare the teeth for immediate filling, and securing a cure for dento-neuralgic affections.—*Dental Cosmos*.

SIXTH ANNUAL SESSION OF THE AMERICAN DENTAL ASSOCIATION.

The American Dental Association met at the State House, in Boston, on Tuesday, the 31st July last, for its Sixth Annual Session. The officers are—

* The teeth of the graminivorous animals demonstrate this secretion of the dentine into the atrophy of the external tooth. Calves' teeth are very large, the roots completely hollow. The "artificial teeth," in former years used by dentists as substitutes for natural human teeth, which were scarce and high-priced, from being imported from France, were old cows' teeth, worn away by attrition, and solidified by the deposit of dentine in the pulp chamber. Place such in a dry heated place, near the stove, for a few days. The dentine will shrink from the cementum, perfectly modeled after the form of the dental chamber.

President.—Dr. C. W. Spalding, St. Louis, Missouri.

1st Vice-President.—Dr. G. H. Cushing, Chicago, Illinois.

2d Vice-President.—Dr. James McManus, Hartford, Connecticut.

Corresponding Secretary.—Dr. L. D. Shepard, Salem, Massachusetts.

Recording Secretary.—Dr. J. Taft, Cincinnati, Ohio.

Treasurer.—Dr. I. J. Wetherbee, Boston, Massachusetts.

The Association was welcomed in a neat and appropriate speech by Dr. N. C. Keep, of Boston. After which the report on credentials was presented and names of delegates present read. The report was accepted. It was as follows :

Association of Clinical Lecturers of the New York College of Dentistry.—Drs. Ehrick Parmly, W. B. Roberts.

Brooklyn Dental Association.—Drs. W. Jarvie, R. M. Streeter, A. Y. Paddock, J. B. Young, A. C. Hawes.

Central Massachusetts Dental Association.—Drs. S. P. Miller, J. Gregory, T. D. Chamberlain, O. C. White, C. W. Estabrook, G. L. Cooke, W. W. Snow.

Central New York Dental Association.—Drs. I. L. Nourse, B. F. Arrington, W. H. Goddard.

Chicago Dental Society.—Drs. J. W. Ellis, G. H. Cushing, J. A. Kenicott.

Cincinnati College Dental Association.—Dr. H. R. Smith.

Connecticut State Dental Association.—Drs. F. T. Mercer, J. A. Pelton, E. Strong, R. W. Browne, J. M. Riggs, E. E. Crofoot, William Allender, John Colby, S. L. Geer.

Connecticut Valley Dental Association.—Drs. Joseph Beals, A. F. Davenport, G. Bowers, E. V. N. Harwood, F. Searle, A. B. Cowan, I. F. Adams, S. G. Henry, A. A. Howland, C. S. Hurlburt, S. P. Martin, O. R. Post.

Hudson Valley Dental Association.—Drs. C. H. Jenkins, A. H. Taylor, E. J. Young.

Illinois State Dental Association.—Drs. O. Wilson, L. P. Haskell, M. S. Dean, E. Honsinger.

Indiana Dental Association.—Drs. W. F. Morrill, J. H. Jameson.

Lebanon Valley Dental Association.—Drs. S. H. Guilford, J. Fleming.

Massachusetts Dental Association.—Drs. A. A. Cook, O. F. Harris, E. G. Leach, T. B. Hitchcock, E. N. Harris, J. H. Batchelder, N. C. Keep, W. L. Bowdoin, S. J. McDougal, G. T. Moffatt, J. M. Daly, E. C. Rolfe.

Merrimack Valley Dental Association.—Drs. G. W. Lawrence, Chester Heath, J. Fisk, D. T. Porter, A. T. Johnson, J. H. Kidder, D. K. Bentelle, L. F. Locke.

Michigan Dental Association.—Drs. J. A. Harris, G. L. Field, J. H. Warner, J. A. Robinson.

Nashville Dental Association.—Dr. W. H. Morgan.

Newark Dental Society.—Drs. G. F. J. Colburn, W. G. Lord.

New Haven Dental Society.—Dr. H. J. Stevens.

New Orleans Dental Society.—Dr. J. S. Knapp.

New York College of Dental Surgeons.—Dr. J. Smith Dodge, Jr.

New York Society of Dental Surgeons.—Drs. I. W. Lyon, C. E. Lati-

mer, J. C. Robbins, J. W. Cosad, Frank Abbott, N. W. Kingsley, A. L. Northrop, J. A. Bishop, W. A. Bronson, George E. Hawes.

Odontographic Society of Pennsylvania.—Drs. J. L. Suesserott, A. B. Robbins.

Ohio College Dental Association.—Dr. W. W. Allport.

Ohio State Dental Association.—Drs. C. M. Kelsey, B. F. Spellman, W. P. Horton, C. R. Butler.

Pennsylvania Dental Association.—Drs. J. C. Green, A. Wert, Spencer Roberts, J. H. Githins, J. J. Griffith, G. T. Barker.

Pennsylvania Dental College.—Dr. T. L. Auckingham.

Philadelphia Dental College.—Dr. J. H. McQuillen.

Southwestern New York Dental Association.—Drs. F. M. Briggs, J. C. Gifford.

St. Louis Dental Association.—Dr. H. J. McKellops.

Stratford County Dental Association.—Dr. C. M. Murphy.

Susquehanna Dental Association.—Dr. J. D. Wingate.

Western Dental Society.—Dr. Aaron Blake.

Western New York Dental Society.—Drs. A. P. Southwick, Thomas G. Lewis.

After transacting business usual in such bodies, receiving reports of committees, &c., they went into ballot for officers, and elected

President.—C. P. Fitch.

1st Vice-President.—W. H. Morgan.

2d Vice-President.—L. D. Shepard.

Corresponding Secretary.—A. Hill.

Recording Secretary.—J. Taft.

Treasurer.—W. W. Sheffield.

The Association then adjourned till 7½ P.M.

In the evening session, Dr. Spalding addressed the Association, pointing out particularly the usefulness of Dental Schools, and the importance of increasing the number of efficient ones.

The following day Dr. McQuillen addressed the Association, his subject being the *Interglobular Spaces in Dentine*.

Remarks were also made by Drs. Allport, Barker, Atkinson, Susserott, Allen, Dodge, and Taft, touching on the same subject.

The Committee on the claims of the Dental Vulcanite Company recommended the Association to create a commission of five members, to raise funds, if satisfactory terms cannot be obtained from the Company, and in their discretion to protect any member of the profession against the claims of the Company in the Courts of the United States.

The usual parliamentary proceedings of the third day were agreeably broken in upon by a delightful steamboat excursion down the harbor. They made one or two stops, to view objects of interest. They had music aboard and an excellent collation.

During the fourth day the Association was honored by the presence and an address from Governor Bullock.

In the evening session the Association adopted a *Code of Dental Ethics*, defining the duties of the profession to their patients; maintaining professional character; the relative duties of dentists and physicians; the mutual duties of the profession and the public.

The Association then adjourned to Saturday.

INSTRUCTIONS IN THE PREPARATION, ADMINISTRATION, AND PROPERTIES OF NITROUS OXIDE.. By GEORGE T. BARKER, D.D.S. Professor of the Principles of Dental Surgery and Therapeutics in the Pennsylvania College of Dental Surgery.

This is a neat, instructive, well written and well *printed* work, by Dr. Barker, just issued, bound in a handsome style. The author, in his own plain, unvarnished language, with an aim rather to instruct than confuse, compiles in his little book all the information of any moment that has been given out from time to time, and illustrates by numerous woodcuts. It is interspersed throughout with his own experience with the gas, with gas-holders and mouth-pieces, and he gives the result of his experiments, with a description of his improvement upon the gasometer and mouth-piece. The contents of the work embrace the preparation of the gas, a description of the apparatus for generating it, mode of administration, chemical and physiological properties of the gas, with much other useful information. On page 44 the author tells the reader how to purify the gas after it has been exhaled from the patient's lungs. As a matter of information this may all be very well, and Dr. Barker may feel justified in inserting it in order to make his work complete. We cannot, however, think that any refined dentist, satisfied with his fee, would be mean enough to stoop to such economy. The idea of causing a human being to inhale gas that has been in another person's lungs, and those lungs perhaps diseased, is simply disgusting, and the dentist who is too mean to give his patient pure gas, which he pays for and expects as a matter of course to receive, deserves to be found out, and lose his practice. We do not think much of chemical preparations in purifying the gas. The best purifier is cold water, and when made carefully, the gas when generated is so pure that it requires but little of it to make it absolutely so. A gallon we think amply sufficient to purify forty gallons of gas. The best purifier no doubt is the large gasometer with a movable top, since it is easily worked, and the gas is kept cool over the water. The best inhaler, or mouth-piece, is the one with an inhaling and exhaling valve, the gas from the lungs being allowed to escape into the air, as having done its duty and its services no longer required.

An ingenious inhaler is described by the author, for a description of which we refer our readers to the book, which should be in the hands of all who use or contemplate using the gas.

A. T.

THE CHEMICAL AFFINITY OF OXYGEN FOR OTHER BODIES.

Although it has been ascertained that the affinity of one body for a number of others, is not of equal force, yet we are ignorant how much difference there is in the forces of these different degrees of affinity. The only means of deciding the question is to observe the tendency which several substances have to unite with the same substance under similar circumstances. Oxygen for instance, as a universal agent, might be selected as a standard, and the force of affinity between this and other bodies be estimated by their degrees of oxidation under the same circumstances. We know that there is an immense difference between the forces with which different bodies attract this principle. Some of the metals for instance, absorb oxygen with such avidity that they cannot be preserved in their metallic state when exposed to the atmosphere even for a short time, while others have so little affinity for this principle that they cannot be oxidated without the most energetic means. Thus, potassium attracts oxygen with such force as to decompose water at common temperatures by absorbing it from the hydrogen; while the affinity of platinum or gold for this principle is so weak as not to attract it at all except at the highest degree of heat, or from acids which impart it most easily. We may constantly observe the effect of the different forces with which several metals attract oxygen in the common affairs of life. Thus iron and lead when exposed to the moisture of the atmosphere soon tarnish, and after a time, by the absorption of oxygen, their surfaces become covered with rust, or the oxides of iron and lead. But platinum and gold when exposed in the same manner continue bright and untarnished for years, as may be observed in the points of lightning rods and the gilded vanes and balls of church steeples. This difference can only arise from the different forces with which these metals attract the oxygen of the atmosphere.

There is no department in chemistry, either as a science or an art, which so much needs the investigation of able men as this. Tables of affinity, showing at once the force of attraction between different chemical elements, would enable the inquirer, without further experiment, to decide what substances would decompose any given compound, and therefore how to separate or combine the different principles of bodies for a vast variety of purposes. Tables to a limited extent have already been constructed for such purposes, but the difficulty and magnitude of this subject seems to have deterred the more modern chemists from engaging in this extensive department of the science.

BE CAUTIOUS WITH CHLOROFORM.

No stronger proof can be shown of the weakness of human nature than in its proneness to pass from the use to the abuse of the gifts of a kind Providence for its support and enjoyment. How continually are the aliments intended to nourish and strengthen, the cordials to enliven, and the anodynes to soothe pain, converted into so many sources of disease, of wild excesses and nervous depression! The future is forgotten in the present gratification of appetite, or for mere sensuous pleasures; and health, and not unfrequently, life itself, are sacrificed for an enforced sleep and temporary lull from bodily pain or mental anxiety. A mere mention of alcohol, opium, tobacco and Indian hemp no longer suggests the purposes of the original use of these articles, as soothing and tranquillizing to the animal economy, but rather, instead, a long list of unhealthy indulgences and of diseases affecting both body and mind.

Modern science has added to this alluring and dangerous list two other articles, viz: ether and chloroform, which have the power of removing and preventing pain by deadening sensibility, and, at the same time, rendering the subject of their operation unconscious. Extolled as great boons to humanity, these two agents are already being withdrawn from the exclusive prescription and control of physicians, surgeons and dentists, and appropriated by no small number of individuals for the purpose of removing pain or temporary nervous agitation or discomfort, and procuring sleep in their own persons. Ether and chloroform are used in three modes, first, by inhalation; second, by the mouth, and third, applied to the skin as embrocations, &c. It is far from a matter of indifference which of these two anæsthetics is employed in professional practice. Chloroform is preferred by many surgeons, on account of speedier and more complete effect in causing insensibility during an operation. But there is this serious drawback to its obtaining the preference over ether, from the fact that deaths from the use of chloroform under these circumstances outnumber in large proportion those from ether. We can hardly open a medical journal, without seeing an account of the death of a patient to whom chloroform had been administered, with all due care and caution, before proceeding to the operation. Similar results, but in a much less degree, have been caused by ether. We are the more disposed to press these melancholy facts on the attention of the public, as a warning against the increasing use, by self-administration, of these powerful agents, and especially of chloroform, by persons suffering from headache, neuralgia and various nervous disorders. The danger from such practices is great and imminent, and death the not unfrequent result. But were there no fears of this last, we have to dread permanent derangement of health, and a train of new nervous disorders, all more distressing and unmanageable than those for which the inhalation had been practiced. There is reason to believe that the effects of chloroform are cumulative in the system, and that a suddenly fatal result may ensue from its continued use, even in small quantity.

We are afraid that the manufacture of "fictitious spirits" is carried on to an extent which, were it fully known, could not fail to excite general alarm, though it might still fail to deter large numbers of those who only seek for intoxication on the cheapest terms, from drinking such vile stuff.

On the other side of the Atlantic, drinks and cordials are sold under the name of "Indianna brandee," "medicated whiskey," "pure Islay mountain," "Indian tincture," and "red currant cough elixir," the prevailing principle of all of which was found to be hypo-nitrous ether, prepared from methylated spirit. Even sulphurous ether is used by the needy classes for the same purpose.—*Philadelphia Ledger*.

ORGANIZATION.

BY S. MARSHALL.

[Read before the Delaware Dental Association.]

BEFORE we rear the walls of a house we must construct a firm foundation. If our foundation is not good, it will be useless to raise a building in splendid symmetry, and externally adorn it in the most picturesque style of architecture, and furnish it with elegant furniture, and decorate its walls with paintings of golden hues, and fill its niches with the choicest libraries, unless we were sure we have a foundation upon which our superstructure will *securely* rest.

Gentlemen, I feel that our Association yet needs a more sure foundation in the hearts and minds of the dentists of Wilmington and of our peninsula. So I hope you will bear with me while I try to perform the task of riveting more firmly on your minds a clearer perception of the *great* necessity for more attention, more energy, more spirit and force being thrown into this Association. Every one of you can do something to make our meetings interesting and beneficial. What do we live for? Do we live for ourselves alone? Then leave these crowded cities, and betake yourselves to the prairie, the forest or the cave. If your most supreme good is to be obtained by keeping aloof from one another, then let us dissolve this little band of earnest working souls, who have labored for years to establish this Association, retire to our laboratories, lock ourselves in, and resolve that we will know nothing but what we may peradventure obtain at home, or learn as *chance* is propitious, and casts a pearl of wisdom now and then into our supremely selfish laps. This has been the policy of dentists, almost exclusively, until within a few years; and strange to say, even now, in the blazing light of this hour, there are some who would aspire to be dentists who do not "see any advantage in Dental Associations." It is a truism that "there are none so blind as those who will not see!"

Where would have been our Dental Periodicals if it were not for associated effort? Our periodicals come to us laden with the choicest thoughts of our noble workingmen; men who are alive to the never-ceasing benefits of constant association with their fellow-practitioners.

Where would be our Dental Schools, but for the aggregation and concentration of the labors of our best men? Could you go into even the best-appointed laboratory of the best-informed dentists in the country, and gain the advantages of a dental education, such as you can acquire by the advantages of a Dental College and the advantages of the combined information of the association of the various professors who fill the various chairs in all well-regulated schools of dentistry? No, no! Your own common-sense will tell you in thunder tones you cannot; and a Dental

Society is the next best means of acquiring knowledge. Two dentists, however limited be their general information of their profession, cannot converse five minutes upon their methods of practice and plans of procedure in their laboratory, but they will benefit each other. How strange it is that the capacity of the human mind, gigantic as it is in many directions, should fail to see that in the wisdom of the whole is constituted the wisdom of the individual; that in the information of *all*, as in the happiness of *all*, is constituted the information of the individual. Do you wish to prepare one for the responsibilities of practice; if you wish to obtain the point of greatest skill, you must learn all you can, and then turn round and tell all you know to the members of the Delaware Dental Association. For just so sure as two candles give more light than one; and certain as it is that yours gives no less after having lighted your neighbor's, just as sure are you to be benefited by this course. This is a self-evident proposition, and needs no argument to make it clear as sunlight. And the dentist who neglects or refuses to attend the meetings of an association, not only loses that which he might gain from others, but he smothers up the *little* grain under his selfishness which he thinks is so precious, and yet it is not comparable to a grain of mustard seed. Such a one is unfitted to associate with his fellow-practitioners; he is unfitted for the trying responsibilities of his position; he is unfitted for even the position of a good neighbor; he is unworthy of the confidence and esteem of his patients or the public at large. And the name of him who steadily and persistently refuses to connect himself with a Dental Association, should be made known to the public as one who refuses to take the means placed within his power, to enable him to do that justice to his patients, in his operations, which they have a right to expect and demand. And an intelligent community will soon learn to discriminate between the dentist who uses the best means to perfect himself and he who does not.

Have you lost your time that you have spent in attending these meetings? if so, it is your own fault; you have brought no coals to New Castle, and so there is none for your brother to carry away; but if you had brought coals, some one would have brought grain, and a fair exchange could have been made, which would have been a great blessing to both of you. A word to the wise is sufficient.

Do you know any less about your profession than when you came to the first semi-annual meeting of this Association? Do you feel more discouraged in undertaking a difficult operation? Have you any less to do because some brother practitioner has learned something from you? Have you not also learned something from him? Have either of you less to do on account of what you have learned? Can it be possible that there is less to do because we have all become better prepared to perform our respective operations? If so, I, for one, am glad in my heart that there is less suffering in the world, and consequently, less for me to suffer. Lord, hasten that day when suffering and misery shall be driven from the earth; that day to which hope looks forward with ardent joy; it is yet hidden deeply in the future, and will require the associated efforts of the whole human race to usher in such a glorious, grand and happy consummation.

And when dentists shall so far have done their part in that great work as to prevent all suffering from the teeth, they will be entitled to the praise

and thanks of all mankind. Until then, *never, never* relax your hold on the association of efforts, and labor in the great work of preparing and perfecting yourselves for the high and responsible duties of our honorable profession.

Have you obtained any less remuneration for your services than you did previous to the organization of this Association? If so, I *pity* you from my heart, and would advise you to quit, for the pay of a dentist was very poor before. I, for one, feel better prepared to perform my duty to my patients; and the better we are prepared to perform our operations, the more richly will we be rewarded, and the more honorable will be our position in the community. Labor for these ends, and your rewards will be graciously showered upon you. Stand firm by your *sheet-anchor*—the Association—and her sun of wisdom will light your pathway to distinction.

What blind ignorance and stupid folly it is for two dentists, who reside in a town where there is not practice to pay one, to be at sword's points one with another. How much better it would be for them to be social one with another, and agree to take the practice as it came, and not blacken themselves by dabbling in dirt and filth on purpose to throw it on their brother. By this course, they *both* get less to do; but by an honorable course they would both get more to do. Because it is a fact that if you interfere in a quarrel between neighbors, you are sure to get the ill-will of both; and where two dentists quarrel over a bone, (a tooth to pull,) their neighbors, seeing the quarrel, will avoid helping either, and likely go twenty miles to another dentist. Associated effort will soon rub the angles from your minds, and show you your true position, and the boundless advantages of Dental Associations. But if you would reap the greatest blessings from this movement you must work; *every one must work!* You must not come here and play the drone, and expect to sip the honey which is gathered from the scattering flowers by the workers! If you do, you will fail; you will find in your comb only bee bread where you might have honey. You must, every one, bring a thought; bring your advance thoughts. Exhibit your best plans for accomplishing your manipulations in the laboratory, and your improvements in practice. Then *every one* will be a worker; and my word for it, every one will taste the honey that shall be thus harvested from the flowers of a scientific and true system. For it is an eternally fixed law that labor sweetens the bread of life, and he that will not labor shall not enjoy its fruits. Remember this, and act accordingly, and you will see our Association fixed and firm upon a foundation where it must immovably repose until dentistry shall cease to be known as a profession. And on the corridors of time shall your names be engraved, where they shall be read and honored by all good and true men that pass that way to eternity. And a satisfaction will remain with you that men can never rob you of,—a consciousness that you have done your duty, and done it to the best of your ability, after seeking the best means of crowning yourselves with that ability. For this you will receive the reverence of men, the approval of a clear conscience, the approving smiles of angels, and the priceless reward of well done from your God.—*Dental Times.*

RUBBER vs. WAX.

BY JOHN C. K. CROOKS, M.D., BIRMINGHAM, MICHIGAN.

IN the April number of the *Dental Cosmos*, Dr. Bausman, of Minneapolis, advances certain notions, concerning the use of rubber, which I cannot but consider erroneous. That which I refer to more particularly is the non-injurious effects of wax upon the texture of rubber when vulcanized. I suppose that it is generally understood that, at a moderately high temperature, gum caoutchouc will unite, in a greater or less proportion, with the oils, fatty substances, wax, etc. Now the question of difference is, *Will the rubber become injured by such a union?* If it suffers no injury, then of course, so far as the use of it for dental purposes is concerned, it is of no consequence whether the casts are charged with wax or not; but if the character of the rubber becomes deteriorated—loses its strength and tenacity—it is a question of great consequence, certainly so far as involves the reputation of rubber work, and if established as a principle, so far as involves our own reputation for honesty and uprightness in our business transactions. Having always used wax instead of gutta-percha for trial plates, I have had considerable experience in the matter. In my earlier operations I was extremely careful to remove every particle of wax, as I was taught that the rubber was materially injured by it when left remaining about the teeth and casts. But after a time—when I had gained a little confidence in the manipulation of rubber—I began to think that many of the precautions usually adopted by me were not necessary to uniformly good results, so that when hurried a little in my operations, I did not exercise my former care in removing the wax about the pins, teeth, casts, etc. At first I could discover no difference in my results from this carelessness; but in due time I noticed that some of my plates could be more easily smoothed off and polished than others; that when I cut the rubber plate, particularly about the teeth and pins where there had been most wax remaining, it could be done very easily even with a dull instrument, and left a polished surface behind, as after cutting wax, and when I removed the teeth from such plates, a moderate warming would be sufficient—the plate becoming pliable at a low temperature—and when the teeth were forced away, instead of the rubber (as it should do when good) remaining intact, yielding to the pins and then returning to its position, from its tenacity and elasticity (at most breaking but little), it would tear away in large pieces—sometimes extending through the plate—indicating an almost perfect destruction of the valuable properties of vulcanized rubber—a rottenness which had been induced by some cause; and this cause I ascertained beyond a doubt, from further observation and experiment, to be the presence of wax.

Were we to reason upon the subject *without* experiment, taking facts as they present themselves, we could not but come to the same conclusion. If we incorporate two substances together of similar chemical composition, *mechanically* (and such is the union between the wax and rubber), the compound will partake of the properties of both, and the predominating character will be of that substance which is in excess. If the wax thus united with the rubber is in a very small quantity, the difference in the

rubber will not be perceptible; but if it is considerable, the color of the rubber will be changed to a darker hue, and it will possess those other peculiarities already mentioned, and which are precisely what we might have expected if we had reflected upon the subject previous to experimenting—considering the union mechanical and not chemical. It is so with rubber and wax; it is so with every substance mechanically united with another. Take the old and once familiar example of uniting lard and tallow in the manufacture of candles, or of resin and oil—resin, wax, and oil, in the composition of many of the ointments, and we see the idea sufficiently illustrated. And it is this *mechanical* union which begets all the trouble of which complaint is made. If we had a *chemical* union, then we would have a chemical change more or less marked—a change which would disclose properties new and unique, and easily distinguished from the substances entering into the composition. Reasoning from analogy, then—comparing facts identical with each other—examining the laws which control the union of certain bodies, we are led to the same conclusion to which experiment unerringly leads us, *that rubber and wax, at proper temperatures, will unite mechanically with each other, and that the compound will partake of the properties of both.**

Again: I beg to dissent from any and every method of working rubber, which will facilitate the introduction of that substance into the joints of the teeth. This condition of things will occur sufficiently often without taking any especial pains to obtain such a result. To “want the space filled with rubber and nothing else” is to labor for effects, which are the farthest in the world from an imitation of nature, which I consider should be the first aim of every member of the profession in the construction of dental substitutes. It is true that it is quite a desirable thing to “have no space under or between the teeth,” yet, in the little expedients adopted for the purpose of keeping out the rubber, how great are the “cess pools” in comparison with those in and about the teeth in the use of metallic bases! They are but drops in the ocean, while the dark lines running between the teeth, occasioned by the presence of rubber, destroy the whole beauty and exactness of our work, and they become as the “plague spots” in a Grecian painting, or a “daub” upon the face of an otherwise exquisitely finished portrait—they publish, in characters which speak louder than words, that all of our efforts to copy nature have been but miserable failures. All efforts, then, to exclude the rubber from the joints of the teeth are, in my humble opinion, highly commendable. No matter what may be used, in the ingenuity of man, to work out this desirable end, it is exceedingly praiseworthy. A bad and improper expedient will not be persisted in; and the few good ones, which have been or may be suggested, while they may not be uniformly successful, are steps in the right direction, and are infinitely superior to the condition for which they are offered as a remedy. Perfection, *if within our power*, is that for which we should struggle; and when we become satisfied with anything less than this, we

* It may perhaps be asked, Why do we not have an utter destruction of the properties of rubber, when the packing is done while the wax is frying around the teeth? Because the plaster absorbs the greater portion before the temperature is raised to the point of union, and for other reasons, such as the change of the rubber by the presence of sulphur, etc.

come down from our high position—pledged to improvement, and the highest development of Science and Art.

In this place it was my intention to describe a method by which the rubber can be effectually excluded from the joints of the teeth; but as I have already occupied too much space, I will close by simply saying *that perfect joints*—well set and well hardened plaster in the flasks—judicious and careful packing—not using too much force—*will generally obviate all of the unsightly appearances and unpleasant consequences which ruffle the temper and disturb the peace of that member of our profession who expects perfect results without labor, without patience, and without pains.—*Cosmos*.

STEAM.

WHEN water, or other liquids, are converted into steam, a large quantity of caloric is absorbed, which is not indicated by the thermometer, and which, therefore, becomes latent in the steam.

If a thermometer be placed in an open vessel of water, over a fire, there will be indicated a gradual increase of heat until the water boils, after which no increase of the fire will raise the temperature of the water another degree; nor does the steam, arising from a vessel of water which boils violently, indicate a greater degree of heat than the water itself, or of the steam arising from another vessel which boils moderately. The steam conveys away all the heat above 212 degrees of Fahrenheit's thermometer, which is the temperature of boiling water under the ordinary pressure of the atmosphere. The quantity of caloric which combines with the water to form steam, is nearly 1000 degrees greater than that of the same weight of boiling water. In other terms, the caloric of fluidity in steam surpasses that of an equal weight of boiling water by nearly 1000 degrees. Consequently, there is nearly 1000 degrees of heat in steam which is not indicated by the thermometer, and is therefore latent.

Various methods have been adopted by different philosophers in order to ascertain correctly the exact quantity of latent heat in steam. Among these, one of the most simple is that of Dr. Ure. His apparatus consisted of a small glass retort, with a short neck, inserted into a globular receiver of the same material, made very thin, and about three inches in diameter. This globe was surrounded with a certain quantity of water, at a known temperature, in a glass basin. A quantity of water, or other liquid to be examined, amounting to 200 grains, was put into the retort, and rapidly distilled into the globe, by the heat of an Argand lamp. The heat imparted by the condensation of the steam in the globe, to the water contained in the dish, by which it was surrounded, was indicated by a very delicate thermometer, kept constantly moving through it. By means of this contrivance, Dr. Ure found the latent heat of the steam of water to be 1000 degrees. That of alcohol, of the specific gravity 825, to be 457, and that of ether about 303.

We have stated that the temperature of boiling water, and of steam, is 212 degrees, under the ordinary pressure of the atmosphere. The cause of ebullition, or boiling, is the formation of vapor, or steam, at the bottom

* The remarks of Dr. Chandler, of Boston, in the December number of the *Dental Cosmos*, are directly to the point, and are deserving of the highest consideration.

of the vessel, in consequence of the application of heat there. The steam being lighter than the water, or other fluid from which it is made, constantly ascends in bubbles, and escapes from the surface into the open air. The process of boiling, when conducted in a tall glass vessel, over an Argand lamp, may be minutely examined, and is both interesting and instructive.

It is found by experiment, that different fluids at the surface of the earth boil at different temperatures, depending generally on the specific gravity of the fluid, and also, that the same fluid boils at various temperatures, depending on the degrees of atmospheric pressure. Thus, under the same pressure of the atmosphere, or on the level of the sea, water boils at 212 degrees; ether at 100 degrees; alcohol 173 degrees; nitric acid, of the specific gravity of 1,450, at 240 degrees, and water, saturated with sea salt, 216 degrees.

We may observe, that in these instances, the boiling of a fluid seems to follow a general law depending on its specific gravity. This is strictly the case in respect to the boiling point of sulphuric acid, which always requires a temperature for its ebullition in a direct proportion to its specific gravity. Thus, according to Dr. Dalton, sulphuric acid, specific gravity 1,408, boiled at 240 degrees, while that of specific gravity 1,670, boiled at 360 degrees; that of 1,780, at 435 degrees, and that of 1,850 at 620 degrees.

The boiling point of a fluid is not, however, in all cases, to be estimated by its specific gravity, the fixed oils requiring much higher temperatures for their ebullition than other fluids of the same density. Thus, linseed oil boils at 640 degrees, though its specific gravity is less than that of water; and mercury boils at about 660, though its specific gravity is about 14 times that of water. That water, or any other fluid, will boil with a less degree of heat, in proportion as the weight of the atmosphere is removed, may be readily proved by means of the air pump, or by ascending up a mountain, where the air is less dense than it is on the level of the sea.

The most simple illustration of this subject, with the air pump, may be made by means of a small vessel of ether; for if this be placed under the receiver, and the air exhausted, the fluid will boil, or turn to vapor, during ordinary temperatures of the atmosphere. If a vessel of hot water, instead of the ether, be placed under the receiver, and the air withdrawn from it, the water will continue to boil until its temperature is reduced down to 70 degrees. In the absence of an air pump, the same principle may be strikingly illustrated as follows: Adapt a good cork to the glass flask, so as to make it air tight; put a gill or two of water into it, and apply the heat of a lamp until it boils. After it has boiled for a short time, introduce the cork, and at the same time take the flask from the fire. It will continue to boil for a few minutes after its removal. When the ebullition has ceased, it will boil again violently on plunging the flask into a jar of cold water. On taking it out of the water the ebullition will cease, but will instantly recommence if again plunged into the water; and this may be continued until the flask is nearly cold.

In this experiment, the boiling is continued in consequence of the partial vacuum which is occasioned by the condensation of the steam with which the flask was at first filled. If the flask be taken from the vessel of cold water, and plunged into one of hot water, the boiling will instantly cease,

because the heat will convert a portion of the water in the flask, which had been condensed, into steam, and thus the partial vacuum, which had been formed, will be filled with vapor, the pressure of which will prevent further ebullition.

This principle is beautifully illustrated by the fact, that the higher we ascend from the surface of the earth, the lower will be the temperature at which water boils. The reason is obvious; the pressure of the atmosphere diminishes in proportion to the ascent, and the boiling temperature sinks in proportion as the pressure is removed. Upon this principle is constructed the *thermometric barometer*, which indicates the elevation of any place above the level of the sea, by the temperature at which water boils at that elevation. By experiment, it has been found that a difference in elevation, amounting to nearly 520 feet, makes a difference of one degree in the boiling point of water. A traveler, therefore, who ascends a mountain, may ascertain nearly his elevation by the temperature at which he finds his tea-kettle to boil. Thus Saussure found that at a certain station on Mont Blanc, water boiled when heated to 187 degrees. This being 25 degrees less than its boiling point at the level of the sea, allowing 520 feet for every degree, would give an elevation of 13,000 feet. This method cannot, however, be very accurate, since the weight of the atmosphere at the same place varies at different times about three inches of the barometric gauge.

VARIETIES.

WHEN do your teeth usurp the functions of the tongue? When they are chattering.

PUTTING a stop to a woman's tongue is said to be a difficult punctuation.

"OH, dear doctor!" said a poor sufferer to a dentist, "that is the second wrong tooth you have pulled out!" "Very sorry, my dear sir," said the blundering operator, "but as there were only three teeth altogether when I began, I'm sure to be right next time."

To make a glycerin for hermetical sealing, add an ounce and a half of glycerin to a pound of melted gelatin, dip your bottle mouth in it several times, to obtain the requisite thickness.

A CORRESPONDENT of an Australian paper, the *Orange Guardian*, writes:—"Some twenty-two years ago I recognized the asbestos, or amicanthus rock, in this district, and since then I have from time to time exposed portions of the stone to atmospheric influence, and the result has always been a perfect change of the stone into asbestos or into a substance closely resembling the finest staple of wool only something stronger, and, if possible, whiter in appearance. I have sometimes obtained it six inches in length, have combed it out and found it soft and pliant as silk. This substance, as no doubt you are aware, is inconsumable by fire. The stone may be brought into a state of asbestos in a very short time. I have been employed sinking a well of late, and some days I get as much of this mineral as would make a suit of clothes."

It is now shown that though the transmission of sensation is so rapid that the effect seemed to be coetaneous, nevertheless it is not so, and there is in reality an interval of time between the prick of a pin on the foot and the perception of the sensation—an interval so minute indeed as to be inappreciable, for no space of time less than the tenth part of a second can be distinguished by the natural powers of man. By mechanical contrivances and electricity, however, the velocity of nervous agency can be undoubtedly determined. The nerves of a frog recently killed were excited by secondary voltaic currents, and the contraction of the muscle thereby produced was shown by magnifying the effects, so that in one case a small flag was raised; in another arrangement the effect was seen by releasing a trigger; and in a third case lines were stretched on a blackened glass, that were afterwards exhibited by the electric lamp. Nerve force is not so very rapidly transmitted. In a creature so long as a whale, the fact of a harpoon having been thrust into his tail would not be announced in the creature's brain until a second after it had entered, and it required another second to transmit the force required to remove the extremity of its tail.

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GRATUITOUS CLINICS.

IN order to prevent misunderstanding, it may be well as a premise to the following comments, to say that we still hold to our views expressed in former editorials in support of Dental Colleges; being still of the opinion that they are the best means of imparting thorough dental education. We still entertain the kindest regards for all the Professors with whom we have had so much pleasant intercourse. We know that their positions are difficult ones to fill. We know that it requires enterprising and learned men to fill them, and that their labor is a "labor of love"—and will be, even when their services are well paid for in dollars and cents.

We are aware that this is a very delicate subject to handle—indeed, we would much rather somebody else would have agitated it—much rather still that the Professors had acted upon it, and thus saved us the necessity. Two or three years ago we were urged to call attention to the grievance; we, however, refrained; but the number of students is now increasing so rapidly in both institutions in this city, and the dissatisfaction of the profession is so great at the enormous amount of gratuitous work for "well-to-do" people, who are boasting of getting dentistry done for nothing—and really consider such imposition and swindle a good joke—that we are constrained to call the attention of the Faculties to this matter, urging the adoption of a more rigid system of conducting the business of the clinic room. Suppose one hundred or more stranger dentists should annually appear in Philadelphia, and remain four months, advertising gratuitous services, we opine that no more work would be taken from regular practitioners than is now taken from them by these gratuitous clinics.

If the services of the students were rendered to those only who are unable to pay for dental services, it would be a laudable charity; and is, so far as the labor is performed for such. But not only the testimony of the students—who naturally prefer beauty or nice attire among the applicants—is forthcoming to prove that those in good circumstances, well able to pay for such services, profit by the clinics, but the testimony also of

many dentists. For instance: a lady calls at the office of Dr. A. and enquires the price of a set of teeth on silver-plate. She is informed thirty dollars, upon which she exclaims, "Why I thought you only charged twenty-five dollars." The suggestion that a dentist is warranted in raising his price a per centage on account of the "raise" of everything else does not satisfy her. She leaves with the remark—"A friend of mine got a set at the Dental College last year; I shall wait until fall, and get mine there too!" Two young girls call on Dr. B., one to have an operation performed. While it is in progress, the other whispers to her—"I am going to the College to have mine done!" A young lady, daughter of a Market street merchant, calls at the clinic room, and engages the services of one of the students. After examining her teeth, he informs her that to fill them with tin, there will be no charge, but if filled with gold, one dollar and twenty-five cents for filling will be charged; and inquires what material he shall use? She decides to ask her father, and he tells her to have them filled with tin, which is accordingly done. A miserly old man, owning, if we understand correctly, several houses, his circumstances being known to the student, is allowed to depart with a set of teeth by paying five dollars. Thus it is that our friends, on account of the want of a proper system of conducting the clinics, allow themselves to be imposed upon by the mean and selfish, who crowd out the very ones for whom the clinic is intended.

A reform by the Faculties of the Colleges, so as to stop this abuse and to compel such economizers to pay for their dentistry, would serve more than any thing else to cement a friendship between them and our city dentists. Let the needy only be the recipients of the clinic privileges, and past prejudice, if not enmity, engendered by work lost in this way, will give way to a kindly support and encouragement to this laudable undertaking—and no doubt numbers of them, with their students, will come forth for College honors and a diploma, so necessary of late years to complete the furniture of a dentist's office. The only way in our estimation to have the poor alone benefited by the services of the students, is to require every applicant for such services, to bring his or her affidavit before an alderman in the vicinity of the college, that he or she is unable to pay for a dentist's services, and if possible let inquiry be made as to the ability of each one to pay.

A. T.

WHEN the hands become blackened from the smut (a sulphuret of iron) from the iron flask after vulcanizing, the simplest and most effective way of cleaning them, is to pour about a teaspoonful of the ordinary kerosene oil into the palms of the hands and rub well. The oil will dissolve and remove the black, then wash clean with castile soap and warm water.

For the Dental Quarterly.

THE DUTIES OF DENTISTS TO EACH OTHER.

BY DR. N. L. WILLARD.

IN attempting to write upon the subject I have chosen, I am keenly aware that I am treading upon delicate, and I might say, almost forbidden ground. But feeling the necessity of instituting a higher code of etiquette among my professional brethren, I venture to speak upon what I consider glaring evils, disgraceful exhibitions of radical ill-breeding and miserable quackery and selfishness. It is a notorious and lamentable fact, and one which should make every honest man's cheek burn with shame, that among the members of no trade or profession, physicians scarcely excepted, is there so much back-biting, abusing, and slandering as in the dental profession! And why is this? Is it because none but men who are unworthy of the name, belong to its ranks? Is it because they bear the mark of Cain that their hands are forever against their brother? One would suppose, from the universality of this disgrace, that the chief end of dentists was to see first how much they could abuse and traduce each other.

But is this right? Is it manly? Is it noble? Do you feel any better after parading the faults and mistakes of your professional brother before your patients and friends? Have you exalted yourself in their estimation, or your own? Do you not feel just as though you had done a mean thing, and just as though you wish you hadn't said quite as much, because you didn't really mean all you said? Of course you do if you are a gentleman, and this is one of your redeeming virtues, that you *are* sorry. "But," says one, "just look at that miserable excuse of a man across the way there. He has a dental room in front and a barber shop in the rear, so that if he cannot shave his patients one way he can another. Do you suppose I am going to take him by the hand and admit him to my professional confidence?" By no means! I would not advise others to do what I would not do myself; but while I could not meet such a man as a practitioner worthy of my respect, nor recommend him to my patients and friends as such, simply because he had not taken steps to warrant me in giving him my confidence, it does not necessarily follow that I must fall to abusing him and telling everybody else about him, as though I was the only member of community who could distinguish the tree by its fruits. Because he happens to own a pair of forceps, and perchance can put up an artificial denture, it is no sign that he is a dentist any more than that paste is the genuine diamond. The cloven foot will stick out, and others will see it, in spite of all he can do, thus saving you the trouble of saying anything about him one way or the other. Let such men severely alone, and public opinion will soon put them out of the way, and that too, most effectually.

But where there are two or more practitioners of ability and skill in a place or vicinity, what is more beautiful than to see them all on friendly terms with each other? What engenders happier feelings than to see them making friendly visits to each other's offices, being present at each other's social gatherings, and treating each other as only *true* professional gentlemen can? They elevate the standard of their professional duties and relations, and teach the community to respect them; and because they respect each other and themselves, society at once places them in their proper sphere. ABILITY alone should decide patients as to whom to go, and should an operator lack this in any particular, there is an excellent chance for that operator to improve, and until he does so improve, he has no right to ask or expect that to which he is not justly entitled. It is only by association and interchanging of ideas that any advancement of importance in our profession is made, and unless we are disposed to receive or impart knowledge in a fraternal spirit, we at once defraud not only our neighbors, but ourselves, and certainly this is not wisdom. In a professional as well as in a religious point of view therefore, we should let our light shine, so that all may receive the benefits thereof.

There is one other point in this connection which I deem of some importance, inasmuch as little acts of kindnesses and magnanimity go as far towards showing what a man's character is, as straws do in showing which way the wind blows. I refer to the habit many practitioners have of charging regular dentists for operations performed for them personally. Now it will not be admitted for one moment by any member of our profession, that we cannot afford to be as generous as physicians; and yet who ever heard of a first class physician charging for services rendered a brother practitioner; unless it was for simple costs of medicines, etc. And yet how often do we hear of operators charging three-fourths, and even full price for operations performed for a brother dentist. Now I look upon all such proceedings as supremely selfish, and unworthy a high-toned operator. Indeed, no high-toned surgeon will be guilty of such a little thing. If his price-list with his patients is not sufficiently high to warrant a generous deed to his professional brethren, then he is not what he ought to be as an operator or as a gentleman. Of course there is nothing morally *wrong* in his charging him as much as he would anybody else. But that is not the question at issue. Is it an event to which he will refer with feelings of satisfaction afterwards? If it is not, then he has certainly violated his sense of magnanimity and good feeling. For a few paltry dollars he has possibly forfeited the friendship of a worthy and influential brother. "But," says one, "if an operator will allow such a little thing as that to influence him, I do not want his friendship." But stop, my friend, not so

fast. Trifles light as air make up our daily life and practice, and a little word unguardedly spoken, has often proved irreparable. We cannot be too careful in all our dealings with both patients and operators, not to wound feelings either by word or action. In my own practice, I have always made it a rule to charge a regular dentist *nothing* unless the operation was a long and tedious one, and then only the simple cost of materials. My time I consider as his by virtue of his profession, and his honoring me with his call, and I believe I have the satisfaction in knowing that in all such cases, my services have been fully appreciated. My practice is the same towards physicians, or nearly the same, for I consider them as first cousins, if not *half brothers*. The result is, the barrier between us is broken down, and we meet upon common ground and to our mutual advantage. The same courtesy is generously extended to me in return, and the warm impulsive feelings of friendship and regard thus generated, is worth tenfold the cost of a few hours' labor and shillings worth of gold.

TITUSVILLE, PA., Nov. 1, 1866.

For the Dental Quarterly.

COMPENSATION.

BY A. LAWRENCE, D.D.S., LOWELL, MASS.

ALL the forces and events of the universe are unmistakeably regulated by the law of distributive justice. Since the advent of the Morphological conception of the universe, the doctrine of "evolution" has taken the place of the notion of a mechanical "creation," and the late discoveries in the world of science have shown that forces are correlative and equivalent; *e. g.*, given—so much heat, an equivalent amount of motion, light, electricity or magnetism may be evolved from it. The idea of the correlation and equivalence of forces, is the inductive manner of stating that an eternal law of justice rules in the physical, mental, and moral worlds. The late experiments in science establish a correlation and equivalence between forces. Thus: the fall of 771 lbs. through one foot, raises one pound of water one degree, Fahrenheit. The proved relation in amount between the affinities of combining bodies and the heat evolved during their combination, the quantitative connection between chemical action and voltaic electricity already established. The experiments of Faraday, implying that a specific measure of electricity is disengaged by a given measure of chemical action; the demonstrated equivalence between the amount of heat generated, and water converted into steam; the known expansion of steam under the influence of each additional degree of heat, all render it certain that among the various forms of force, the quantitative relations are fixed. And hence the fall of the sunbeams on to the earth finds its correlation

and equivalent in the rise of vapor and the consequent fall of the snows, rains and rivers to the earth and into the sea. The silent rush of the planets through the heavens, is but the transformed molecular motion of the original photosphere of the sun. The world of forces obeys the laws of addition, subtraction, multiplication and division, and mind itself is a force, or rather the original source of all forces.

Grant a God—an eternal Infinite mind, and this correlation and equivalence of forces is but the outer physical *ensemble* of the inherent laws of Divine reason—of eternal distributive justice. This law holds between physical and vital and mental forces. The more mind a man exhibits, the more blood he burns up or exhausts, and the more blood he exhausts, the more food, light, heat, and air, he requires. And it holds also, between the individual and society, between man and men. This law secures that we get from our fellows what we pay for—no more, no less. It secures that the quack shall be quacked at last, and the longer the credit given, the heavier the interest which will be ultimately required. If he seems to triumph for a time, it is only that his falsehood may lift him to the verge of his ambition in order to secure his more complete ruin when he falls. And then, his social ruin reduces him to his true level, from which he can, if he will, rise to a more elevated station among his fellows. To illustrate: The dentist—if he be merely an artist—merely a worker in *contraband* rubber and mineral teeth—a model Tubal Cain, and not also a teacher of his patient, instructing how to save teeth from decay, may get his full compensation in dollars for his artifice, but he will not command that utter trust, that moral confidence, that sublime fraternity, which is the true compensation for the work of the soul.

There is a higher form of this law of compensation, than that which for a certain expenditure of professional skill shall fill one's tills with money. All exist for moral as well as for pecuniary benefits, else they are not men. The professions become grand, sacred, blessed—in just the ratio of their actual power to benefit the world.

There is something of a practical immorality in the present relations of the professions to the people. The physician thrives on sickness, the lawyer on quarrels, and the dentist on decayed teeth. "Let these professions teach the people how to *preserve* health, to *avoid* difficulty, and to *prevent* the decay of the teeth perfectly, and our business would be destroyed," I hear you say. Very well, which is first and paramount, man, or his diseases, and the consequent wealth of the professions? Does man exist merely that doctors, lawyers and dentists may thrive? or, do the professions arise to save, to preserve and elevate man? If one affirm the first, all moral dignity and worth departs the professions. But if the second be

affirmed, all the professions become the physical and moral regenerators of society; the grandest moral element enters into their career and function, and the compensation for such professional service is a gradually beautified lofty-souled society.

Let the people pay us to teach them how to save themselves from the ills incident to a perverted civilization, and we are at once in harmony with all the great interests of mankind and the moral laws of God. The compensation for such relationship is measureless happiness and blessedness. Now it is the financial interest of the physician to have everybody sick; of the lawyer, to have everybody in a quarrel; and of the dentist, that the people's teeth may rapidly decay. Add the moral law of compensation, and nobody likes the members of either profession named. The people look upon us as "necessary evils." But once let us shift our relations, so that we become principally teachers, and incidentally only, manipulators, etc., and while the long continued sins of our ancestors will secure us plenty of patients for some generations to come, we shall yet lay the foundation for a broader and higher professional character, at once consistent with all the laws and interests of man and of society.

Nor is this all. Since the moral and spiritual laws are primordial, obedience to them secures the highest possible inspiration to genius, talent, and intellect. "Talent invariably sinks with character;" it must therefore rise with character. Elevate the professions into harmony with the primordial code of nature, which recognizes exact compensation for every act or failure to act—for every mental effort and aspiration for the highest good, and our professional ranks will be ablaze with genius, with talent and new discoveries, new ideas—a new society will arise upon the world. Great aims alone can quicken genius and attract it into the centre of social power.

"Moreover, a moral compensation reaches to the secrecy of thought;
For if thou wilt think evil of thy neighbor, soon shalt thou have him for thy foe:
And yet he may know nothing of the cause that maketh thee distasteful to his soul,—
The cause of unkind suspicion, for which thou hast thy punishment:
And if thou think of him in charity, wishing or praying for his weal,
He shall not guess the secret charm that lureth his soul to love thee."

PHENOL SODIQUE.

THIS new hæmostatic agent seems to be attracting the attention of the profession; and many inquiries are made concerning its efficacy and useful properties generally. We give below the opinions of Dr. M. P. LINTON, of Newton, Bucks Co., Pa., regarding it, in a letter to the Dental Times. His remarks, it will be observed, are highly commendatory. Should we

discover any views from as respectable a source, contrary to these, we will promptly give them to the public. Dr. Newton having procured a bottle of it with the request that he would try it and report, says:—

But not being much of an enthusiast in “new remedies,” I thought but little of it at the time. However, I brought it home, and placed it in my medical-case, with a purpose of complying with their request, should any suitable opportunity present itself. That opportunity was not long deferred. I accordingly made the application, and was so pleased with the results that I immediately determined to take it under more favorable consideration.

And it so happened at the time that quite a series of suitable cases presented themselves in rapid succession, all terminating, with scarcely an exception, in equally favorable results. The consequence of all of which has been, that, reasoning from its ascertained properties, the analogy of cases, of tissues, of causes and effects, I soon began to extend its use far beyond the enumerations announced in the programme of the proprietors, until—and especially so for the last two years—scarcely a day has passed that I have not had recourse to it, for some purpose, in some case, relation, connection or another; and that, too, with such marked and very general satisfaction, that I have at length begun to regard it as one of the “professional essentials,” and feel quite free to say that I know of but few articles in the whole *materia medica* that has a wider or more important range of application; and none, perhaps, that has so rarely disappointed my just and reasonable expectations.

And although a preparation much more pertaining to the province of the surgeon and physician than to that of the dentist, yet I presume there are but few intelligent dentists, once becoming fairly acquainted with its many and valuable properties, who would ever after willingly consent to be without it ready at their hand; even, in fact, if it were only for the single purpose of the almost magical relief to their patients of those “after pains” of extraction, so frequently scarcely less tryingly endurable than even the main operation itself, simply by wetting a small pledget of cotton with it, and passing it into the cavity from whence the tooth was taken. And if so beneficial in the instance of a single tooth, how much more pricelessly invaluable in the case of extraction for a full set, where the alveolar processes are necessarily all laid open, and the gums unavoidably lacerated. Immediately relieving all pain and soreness, arresting the not unfrequent hemorrhage, and continued as a mouth-wash, by its peculiar and specific action causing the rapid absorption of the extravasated blood, and thereby preventing the usually attendant factor of the breath, so very annoying to patients in such cases; and finally, in speedily closing, healing and hardening the gums, no unimportant consideration, especially with that fairer portion of creation, who seem instinctively to have a very natural horror of a “speaking vacuum” in so obvious a portion of their “title pages of beauty.”

And this is but a single instance of its many phases of usefulness in the dental art. Yet amongst its other various and important applications, I will in this place essay to mention but a few, trusting, that the article once introduced, will be found amply able to fight its own battles, and “carry

the victory to the end," readily suggesting, by its obvious properties, to the judgment of the observant and intelligent practitioner, the various and many cases and conditions to which it may very hopefully and beneficially be applied.

And firstly of them, from its pre-eminent hæmostatic properties, its application for the arrest of that peculiar and not unfrequent persistent hemorrhage in some constitutions—or perhaps, more correctly speaking, incidentally cachectic condition of the system at the time,—sometimes following the extraction of a tooth,—in which case I have always preferred it to any of the ferruginous preparations, as it appears to be entirely free from any escharotic or irritating qualities; but on the contrary, especially sedative and antiphlogistic in its action,—never having observed, on any one occasion, swelling or inflammation to have followed its use. And hence, from the same considerations, it being a powerfully antiseptic, I have likewise decidedly preferred it to creasote for the treatment of nerve-cavities, preparatory to fang-filling,—in which class of cases I have as yet to meet the first instance that has been followed by any other than the most satisfactory results. And hence, also, from the same chain of reasoning, it will be found especially applicable to the management of certain cases of toothache, the which will readily present themselves to the judgment of the discriminating practitioner.

And secondly—and perhaps by no means its least important service as a dental auxiliary,—its especial adaptation to the treatment of those instances so frequently presenting themselves in the operative chair; I refer to that class of cases of soft, spongy, swollen or ulcerated gums, bleeding upon the slightest touch of the instrument, invariably attended by a more or less offensive breath, and a tender, inflamed, and not unfrequently exceedingly sensitive, exposed dentine; cases that, to proceed with at the time, would be not only very decidedly unpleasant to the dentist, quite unbearable by the patient, and most absolutely impossible to conduct an operation to a successful and satisfactory termination. In such instances I always prepare a mouth-wash of the phenol, and dismiss my patient for a few days, with directions for its use.

Upon re-presenting themselves, I invariably find a marked and most decidedly improved condition of affairs to have been brought about, and the desired operation is readily proceeded with, with a pleasantness to the dentist, a comfort to the patient, and a final conclusion that would have been absolutely impossible of attainment under any other course of procedure.

In the same category, I might, perhaps, here note, not unfittingly, another class of causes of an unpleasant breath, (always an abomination to the operator,) and by no means a stranger to the dental-chair, arising from an ulcerated condition of the throat or diseased lungs; all of which are as speedily and effectually relieved by the simple inhalation of the vapor from the article in question, evolved from the bottle by the heat of the hand, taken through the ordinary inhaler; or, if you choose, "imbibed" from the spout of that common domestic institution, the old maid's comforter, yecept "the china tea-pot."

And thirdly,—and for the treatment of yet another item of our professional abhorrence,—that unfortunate, as most repellant of human afflictions,

ozena, it absolutely has no compeer in the whole range of the *materia medica*, so far, at least, as our experience has yet tested.

While fourthly, and lastly, if I might jump to a conclusion from the result of treatment of the four cases of diseased antrum that have fallen under my care during the last two years, I might readily conclude it was just the *ne plus ultra* to that end,—as in each one of them the cure was alike painless, prompt and absolute; the first two having now been respectively of eighteen months and two years standing, and no symptom whatever in either case of a return having as yet manifested itself, I think they, at least, may be set down as “radically cured.”

But of this enough for the present; and I would only further add, that I would earnestly recommend that every dentist should procure a bottle of the article in question for himself, and test it to his own satisfaction,—the best, perhaps, arbitrament after all.

INTRODUCTORY LECTURE,

BY C. A. KINGSBURY, M.D., D.D.S.

[Delivered before the Philadelphia Dental College, Nov. 1, 1866.]

GENTLEMEN :—The progressive character of the age in which we live, as well as the wide-spread prevalence of diseases of the Dental organism. demands that the Dental Surgeon should be *educated—thoroughly educated*,

It was the keen apprehension and deep conviction of this fact, that originated the efforts which culminated in the establishment of the “Philadelphia Dental College,” an institution whose past success, and present prosperity, warrants its future permanency. Three years ago I had the honor to occupy the chair of “Dental Physiology and Operative Dentistry” in this institution. How well the duties were performed, I leave for others to decide. In the order of Providence, circumstances occurred of such a nature, as to render it necessary for me to resign my position, which I did with the less reluctance and regret, from the strong confidence I had in the high qualifications and peculiar fitness of Dr. George W. Ellis—the Demonstrator of Operative Dentistry at that time—to fill the vacancy thus created. And I am sure I only give expression to the general sentiments of the faculty and alumni, when I state that the distinguished ability with which he has performed the onerous duties of the position, has proved that confidence to have been well founded.

Family afflictions, impaired health, and new duties imposed by domestic ties, have combined to compel him, within a few days past, to tender his resignation. Having been identified with the organization of the Institution, and knowing as they did, my unabated and increasing interest in the cause of Dental Education in general, as well as my special solicitude for the continued prosperity of this Institution in particular, it was natural that the faculty should have looked for one to fill the gap in an emergency, and upon short notice, who had years ago shared with them in the trials and difficulties unavoidably connected with a new educational enterprise. With much hesitancy and not a little misgiving, did I accept the position. Consequently I am here to-day, gentlemen, to welcome you to these halls

of instruction, to assume the responsible duties of my office, and to establish between you and myself the interesting relations that exist with the preceptor and the student. Without claiming any remarkable qualifications for the honored position I am called to fill, I feel assured that you will readily concede that the early period at which I consecrated myself to the profession of your choice, the time and labor I have devoted to it, and the varied experience derived from a large and increasing practice for some twenty-six years, enable me to view some things from an entirely different stand-point from that which you occupy yourselves.

In this connection, and at this early stage of our acquaintance, permit me to congratulate you upon the very auspicious circumstances under which you enter upon the study of your profession. Could you go back with me some thirty years, and examine the status of the profession in those days of gross ignorance and professional jealousies, when charlatanism was rampant, and the first faint dawnings of a brighter future were scarcely discernible, when there were no Dental Colleges, no Dental Journals, no Dental Associations, when books on Dental Surgery were exceedingly rare, full of faults, and difficult to obtain; when the science and art of Dentistry consisted of sundry recipes and secrets that were shut up in drawers, put under lock and key and guarded with a jealous and watchful eye; could you transport yourselves back to those dark days and surround yourselves with the almost insurmountable difficulties, and experience the slow progress of the Dental Student in those times, I am sure you could not fail to have a grateful appreciation of the present wonderful facilities afforded for a thorough education in every branch pertaining to our humane and noble profession.

But with all the superior advantages you may here enjoy, and with the most faithful and earnest efforts on the part of the faculty, you will fail to reach the proper standard, unless there is a disposition on your part, to avail yourselves of the ample means within your reach. There is an important part for you to act; there is a work for you to do, which no one else can do for you. Let each one of you honestly seek to understand his duty, and when learned may we not hope that it will be faithfully and cheerfully performed.

Permit me to touch upon a few points worthy of your attention, and eminently calculated to conduce to your success in your preparatory studies, and promote your future well-being. A consideration of the various branches embraced in the curriculum of this institution, cannot fail to suggest to you the importance of a judicious appropriation of your time. The young man who expects to idle away a considerable portion of his time while attending a course of lectures on medicine or dental surgery, and at the same time prepare himself to graduate with any degree of credit—not to say high honors—will find himself bitterly disappointed. Not that we would have the student overwork himself, or deprive himself of proper exercise during the day, or needful rest at night. But in order to prepare himself for the clinics and practice of the infirmary, as well as to receive the full benefit of the ordinary lectures, he must apply himself studiously to the text-books, and make himself thoroughly acquainted with their contents. Attention during the delivery of lectures, as well as prompt and regular attendance upon the same, should be regarded as essential.

The taking of copious notes will fix the attention, aid the memory, and prove of great service for future reference. The importance of observing regular hours for sleep, will not be regarded as a light matter by those who wish to preserve clearness and vigor of mind or the health of the body.

I would advise you to avoid the use of tobacco in all its forms. It is a filthy practice at best; and one that a dentist cannot indulge in without exciting the disgust of at least some of his patients, and subjecting himself to more or less odium. I do not propose to enter into the merits of the question touching the use of the "narcotic weed," *pro* or *con*, or to adduce even a single argument antagonistic to the practice, however numerous or cogent such arguments may be. But I confess to you most candidly and sincerely, that I never see a dentist taking a pinch of snuff, smoking a pipe or cigar, or chewing his quid, without thinking of a muddled brain, excited nervous system, diseased salivary glands, and many other unpleasant and pernicious consequences associated with its habitual use. The habit, when inveterate, is among the most difficult to conquer. Therefore, if you have become a victim to it, I pity you. If you are free and innocent up to the present time, firmly maintain your integrity against its seductive power.

The use of alcoholic stimulants as a beverage, is an evil of such giant proportions, so frightful aspect, such degrading tendencies, and every way so disastrous and fatal in its consequences, that it might seem to you like work of supererogation to warn you against it.

But, gentlemen, I feel confident that no apology is necessary on my part for the liberty I take in calling your attention to some of the important points so intimately connected with moral character, and so vital to your future eminence and happiness. I know not how others may estimate their position and influence as teachers in our medical and dental colleges, nor have I any disposition to dictate as to the course they shall pursue, but for my part, I feel that I have other and higher duties to discharge towards you, than those of a strictly professional or scientific nature. "As it is a fixed law in natural philosophy, that all bodies in nature should give out or receive caloric until there is an equilibrium of temperature established, so there is a radiation of character upon character. Our thoughts, our tastes, our emotions, our partialities, our prejudices, and finally our conduct and habits, are in a great measure influenced and moulded by the teachings and examples of others." Let us then deal honestly with each other, and aim at the highest good. Let us hold up the beacon-light, expose to the inexperienced mariner the hidden rocks and dangerous shoals before it is too late, ere he goes down a hopeless wreck, and the darkness of moral night closes over him forever. It is a notorious fact that many of the young men who visit our large cities, especially the students of our medical colleges, coming here as strangers from distant points, leaving behind them the sweet and hallowed influences of the family circle, away from the restraints of parental guardianship and the talismanic power of maternal devotion or sisterly affection, become the too willing votaries of sensual pleasure, and the victims of vice and immorality. Intemperance and licentiousness stalk unblushingly upon the streets, and lie in wait at almost every corner. Every art and device that evil spirits can

invent, and designing and wicked men and women can employ, are brought into requisition to entice them from the path of rectitude, and lead them to the haunts of dissipation, and down to the dens of vice and infamy. It is, gentlemen, to save you from these dangers and to place you upon your guard, before you are overwhelmed by the enemy, and lay prostrate bleeding and dying, that I sound in your ears to-day these notes of timely admonition and friendly counsel.

It was the practice of a distinguished professor of surgery in one of our medical universities years ago, at the commencement of each course of lectures, to place before the young gentlemen comprising the class, a fearful array of pathological specimens and preparations, consisting of diseased and necrosed bones, disgusting cutaneous affections, bubo, chancre, gangrene, ichorous and sloughing ulcers, mutilated organs and features, with every possible form of syphilitic disease illustrating the terrible ravages and horrors of the venereal virus. When asked why he made such a display and gave such a lecture at the beginning of the course, his reply was, that knowing the weakness and tendencies of young men, he wished to show them what they would be likely to come to if they indulged in certain vices, and in the event of any of them becoming victims during the course, they could not reproach any one by saying that if they had *only known* the dangerous consequences, they would not have yielded to the seductive temptation.

Gentlemen, I have a higher opinion of your moral worth, than to suppose such a spectacle necessary to protect you from such consequences, however needful and salutary it may have proved in the case referred to. Let me commend to your careful perusal the fifth chapter of Proverbs, containing that most graphic description of the "*strange woman*," and the final results of her seductive arts. "Though her lips drop as the honey-comb, and her mouth is smoother than oil, remember, her house is the way to hell, going down to the chamber of death." As you may hereafter visit some of the wards of the Philadelphia Hospital during the course of these lectures, you will meet painful confirmations of these inspired truths.

No one has a stronger natural love of scenic representations, of fine dramatic performances, than he who addresses you. Yet I must admonish you against frequenting the theatre. In passing by, should you chance to hear the door-keeper call out, "this is the way to the pit," let the words in their double meaning and full significance, prove effective to guard you from concealed dangers. Plato and Socrates in their day denounced the theatre as dangerous to the morals; and Tacitus ascribed the superior virtue of the German women to the fact that they had no play-houses among them. Rousseau, the celebrated infidel philosopher, declared it as his opinion that "the theatre in all cases is a school of vice." Dr. Rush regarded the theatre as "the devil's ground." Let not a morbid curiosity, or an undue confidence in your own ability to dally with any forbidden pleasure without sustaining harm, lead you on by degrees to the brink of the fatal precipice over which so many have fallen. The bare mention of a very common but utterly inexcusable and most ungentlemanly practice, to say nothing of its moral turpitude, I mean the use of profane language—is sufficient to excite anew your sense of indignant abhorrence of a crime without the shadow of excuse.

Permit me to make a most reasonable suggestion in regard to the manner in which you would do well to spend your Sabbaths. Lay aside your ordinary pursuits, studies and thoughts; attend upon the regular services of Divine worship in some of our numerous evangelical churches, and while you are thus giving rest to the physical powers and intellectual faculties that have been tasked during the week, you will call into healthful exercise the moral sentiments, and cultivate the affections into an obedient and sweet harmony with the will of your Creator and Redeemer.

For myself and on behalf of the entire Faculty of this Institution, I cannot refrain from expressing the fond hope, that we shall each and all strive earnestly together to make our relations now commenced, increasingly interesting and beneficial, and aim to secure, as far as possible, the realization of your highest and noblest anticipations. To conclude in the sentiments of one of our own gifted poets :

“So live, that when thy summons comes to join
The innumerable caravan, which moves
To that mysterious realm, where each shall take
His chamber in the silent halls of death,
Thou go not, like the quarry-slave at night,
Scourged to his dungeon, but sustained and soothed
By an unfaltering trust, approach thy grave
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams.”

DENTAL HYGIENE.

BY HENRY S. CHASE, M.D., D.D.S.

[A paper read before the American Dental Association, held in Boston, 1866.]

Dr. Chase treats the subject in a very able manner, and to judge from the length of the article, which he has embodied in pamphlet form, thoroughly understands it. After giving Analyses of the Dental Tissues, time of their formation and treating of the chemical constituents of the various kinds of food in common use, he shows how hereditary diseases and medicinal substances affect the nutrition and growth of the teeth, and the importance of bathing, exercise, fresh air and sunlight in the production of perfect dental tissues. The latter we give our readers :

The researches of Drs. Robin and Migot show that the ossification of the lower jaw commences in the human embryo as early as the twenty-fifth day after conception. At the eighty-fifth day the first bed of *ivory* appears; but during the whole life of the dental bulb calcareous grains appear in its substance. As early also as the eighty-fifth day the follicles of the *permanent* teeth appear.

At the one hundred and thirtieth day the crowns and edges of the Canines, Incisors, and the crowns of the first Molars in the upper jaw are covered with DENTINE.

Thus it should be remembered that ossification of the teeth is in process from the *eighty-fifth* day after conception until *adult life*.

What an important era is this ! How easily are the teeth influenced by all the causes which promote their growth to perfection, or starve and interrupt by disease their best development.

Is it not an imperative moral duty to our patients and the public that we instruct them in the principles of Dental Nutrition and growth?

Imperfect nutrition and development of these organs may be caused by insufficient food, food robbed of its Phosphates, Non-assimilation, Hereditary diseases, Idiopathic diseases, Drug diseases.

It has already been shown that there are millions of children whose blood does not receive sufficient saline materials to properly develop their dental tissues. Thousands upon thousands of mothers and children do not receive food of any kind sufficient to satisfy hunger.

Hereditary imperfections and peculiarities stamp their images on the embryo dental tissues so as to reproduce themselves. Facts enough to prove this position must be known to every medical man, and observer of nature.

That Idiopathic diseases cause non-development of the body is patent to all. Instead of reproduction of the tissues there is a constant cell-disintegration, causing a wasting of the body, which becomes lighter by weight, day by day.

In some chronic affections there is such a drain upon the blood of the lime salts, that all material of that kind ingested would be insufficient for the purpose of *repair*, let alone the *building* up of new dental or bone tissue. Whether this took place in the mother or nursing child it would make no difference as to its effects on the latter, except in degree.

A mother in this condition would undoubtedly part with a portion of the *fixed* lime salts in her own tissues to supply her milk with the necessary ingredients for the nourishment of bone tissue in her nursing child. This supposition is well supported by the notorious fact that many mothers suffer from dental decay, exceedingly, during lactation, the process commencing during Gestation.

Lehmann states that the dentine has abnormal cavities by the absorption of Phosphates, in RACHITIS.

The experiments of Chossat prove that softening of the bones can be artificially produced in animals by withholding food from them containing the Phosphate of Lime. Experiments have also proved that pregnant and nursing women excrete a greatly *diminished* quantity of Phosphate in their urine.

And experience teaches that fractures unite less readily in nursing women than in others.

A fit of sickness often leaves its marks upon the nails of the thumbs and great toe, in the shape of depressions and ridges in its transverse diameter. This may beautifully be seen after a fit of Intermittent Fever that has been repeatedly checked and returned again. The furrows show the want of nutrition, and will be wide or narrow according to the length of each temporary sickness. In the same manner I have often observed similar phenomena in the teeth, especially in the Incisors.

MEDICINAL diseases are very mischievous in their impressions on the growing dental organs. Malformation in shape, defective blending of enamel-caps, and poorly organized dentine are believed to be traced with certainty to Mercurial Ptyalism of the mother during pregnancy, or to improper exhibitions of Mercury to infants and children.

No greater mistake can be made than to give large doses of Mercury to

a child with the belief that because its constitutional effects do not appear in the gums immediately, that therefore it is innocuous to the teeth. The result of hundreds of inquiries and observations to this purpose has confirmed me in its truth.

Metallic mercury has often been detected in diseased dental Periosteum, and we all know that this substance has a peculiarly destructive affinity for the dental and maxillary tissues, in mercurial poisoning.

HEREDITARY SYPHILLIS, the great scourge of humanity, must come in for its share of obloquy as the cause of defective dentine and enamel. None know so well as the surgeon and physican the universality of this horrible infection, sending its terrible influence down through generation after generation, diffusing its baneful influence wider and wider the further it acts from its original source.

Thus, must we believe the whole world to be more or less contaminated by its hellish poison.

It has been satisfactorily proved that the *notched incisors* so often seen, are one of its manifestations. Syphilis, like mercury, acts particularly on the osseous tissues arresting their development, and causing disintegration.

If, as I believe, the fathers and mothers of this country are in a great measure responsible for the integrity of their children's teeth, how shall they so behave as to bring about such a desirable result?

They should both, before conception, see to it that their own teeth are in a healthy condition. No diseased tooth should be allowed in the mouth. Those that are decayed should be plugged. Not only so, but the general health should if possible be secured. No one has a right to entail upon their offspring bodily or mental disease.

No fact is better authenticated in Physiology, than that the present physiological condition of the parents at conception is very frequently stamped upon the offspring, and reproduced in it. A child conceived in a drunken state will be likely to have a drunkard's thirst for intoxicating liquors. Permit me to mention a case.

Mr. A. had six sons and three daughters. Himself and wife had hardy constitutions. He is now in good health at the age of eighty-five. All but one of the sons were born while the habits of the father were very intemperate. The oldest son died at twenty-one in a fit of delirium tremens. The next one was for many years a drunkard, but afterwards reformed. The third one died at eighteen with delirium tremens. The fourth is an habitual wine drinker. The fifth has drunken sprees every few weeks.

Such cases were formerly notoriously common.

Insanity and other mental peculiarities are reproduced in the child. So are Consumption, Intermittent Fever, Syphilis, Scrofula, &c.

It is not too much to assert that the same law holds good in regard to the teeth.

After conception the future mother cannot begin too soon to take those measures which will result in the perfect development and healthy growth of the embryo in every respect. If she lives in accordance with the laws of nature, so far as civilized life will admit, the grand purpose will be effected. A variety and plentiful supply of easily digested food, containing the elements of nutrition in NATURE'S PROPORTIONS, is the first thing

that should arrest her conscientious attention. For reasons already given the *flour* of any grain should be discarded as a *factor* of nutrition. It is only allowable as a *luxury*.

Pork, whether fresh or salted, should be rejected; for it is produced in an unnatural and unwholesome manner. The swine of the yard are entirely different animals from the wild hog of the forest, which is all bone and muscle.

Perfect nutrition can take place only by digesting different elements of food in proper equations. *Fat* must no more take the place of *Albumen* than must *starch*, for they cannot by any known process, be converted, either in or out of the body, into Albumen or Fibrine.

The food of the pregnant mother must be not only sufficient to sustain her, and indeed increase her weight, if she has not arrived at maturity, but she must also ingest sufficiently for the growing embryo.

From the table of analyses already given it is very easy to choose such food as is particularly rich in the phosphates.

It has been already remarked that all food which has not been *depleted* of its natural constituents, will be suitable, provided it agrees with the taste and digestion of the mother. And the same may be said with regard to the infant when it becomes independent of the mother for its nutriment.

To obtain the benefit of nutritious food, good general health must be secured. The accomplishment of this will be promoted by

BATHING AND EXERCISE.—The skin is termed, by some Physiologists, “an enormous gland.” The sweat glands, the oil glands, and the sebaceous glands of the skin are reckoned by millions. The epidermis is constantly being cast off in the shape of epithelial scales, hourly. More than one-half of the weight of the ingesta daily received by the stomach and lungs, is cast out of the system through the SKIN.

Thus nature has provided this great excretory organ to purify the blood, by removing effete substances which have performed their office in the economy of nutrition, and are no longer wanted. Moreover the skin is intended, like the lungs, not *merely* as an organ of egestion, but also one of ingestion.

OXYGEN is undoubtedly received into the blood through a clean skin.

Many of the lower orders of animal life have no lungs, or anything that subserves the ingestion of oxygen, excepting the skin, which fact should be an additional weight of evidence in favour of cleanliness.

Without frequent baths the excretory ducts become closed up; the epithelial scales adhere to the skin by its own exudations, and a crust forms over it which is exceedingly detrimental to health, forcing the effete matters back into the circulation, thus poisoning the blood, and making the lungs and kidneys perform the additional work which properly belongs to the skin. Among other effects, impure breath is a common result of uncleanliness. These remarks are applicable to the child after birth as well as to the mother *always*.

EXERCISE is the only thing which will palliate the curse of non-bathing. When exercise is taken sufficiently to produce sweat, and long enough continued, it will force open the excretory ducts of the skin and depurate the blood of its noxious elements. But to do this effectually it should be daily, and frequent changes of clean underclothing be had.

But I can, by no means, recommend exercise to the exclusion of bathing, to a woman and especially a mother.

Do not the women of this country have exercise enough? No, not of the right kind. Household work is not sufficient. Some mothers do none of this, even. An *expectant* mother should have out door exercise, even if she already has so much household work as to fatigue her. Exercise in the *open air* is much the more wholesome. The purity of the atmosphere and variety of scenery cause an exhilaration of spirits which cannot be obtained within a house.

Exercise in its highest sense is a pleasurable employment of the muscles. Exercise of the body which gives no exhilaration to the mind, is laborious drudgery, and loses a great portion of its good effect by its dull reaction from the mind to the body again.

PURE AIR.—Purity of air is not of less importance than bathing and exercise. According to SCHARLING an adult man *exhales* in twenty-four hours 28 oz. of Carbonic Acid. VIERDOT calculates that the amount of Oxygen *absorbed* in twenty-four hours amounts to 746 grammes or nearly 22 oz.; nearly 4 oz. remaining in the system and combining with the *solid* tissues, and the remainder uniting with Carbon to form part of the Carbonic Acid excreted.

BOUSINGAULT states that $123\frac{1}{2}$ grains of Nitrogen would be exhaled at the same time; and according to VALENTIN, 16 oz. of water also.

The accumulating Carbonic Acid of the body cannot be *retained* in the blood more than about one minute without causing Syncope. Death ensues in a few minutes if it is not excreted by the lungs.

Respiration in a confined atmosphere soon charges the air with Carbonic Acid, consequently it cannot be as readily received from the lungs as it would in a *pure* atmosphere. It acts like a river dam forcing the stream back on itself. A confined atmosphere also prevents the free ingress of *Oxygen*, of which the system demands a certain weight hourly. The eight grammes of Nitrogen given off by the lungs in twenty-four hours is the decomposed tissue of our muscles, &c. The unpleasant odor of a room containing too many people, which is so apparent to one just from the fresh air, is owing in part to this exhaled Nitrogen.

Breathing impure air then, is like wallowing in our own filth, and the filth of others.

The child in *utero* must breathe through the lungs of the mother, consequently *pure* air is quite as necessary for *it* as for her.

SUN LIGHT.—That *sun light* is the source of all vegetable life, is generally acknowledged. Experience has proved it to the uneducated. But there are thousands who pride themselves on their scientific acquirements who practically ignore the great fact that sun light is equally important to the healthy growth and development of higher *animal* life. It is true that the lower orders may inhabit a sunless world, but man could never develop his physical and mental powers without the immediate light of the GREAT POWER of this Planet.

The mode in which the sun produces its wonderful chemical manipulations in the plant is not yet fully solved; the mystery of its metamorphoses in the animal body is yet unraveled. The field is wide, and willing laborers are invited to a glorious harvest.

Mother and child should have a sun bath daily. Naked exposure of the child's whole body to the sun for a few minutes daily, I believe has an excellent influence on its health.

CLOTHING.—In regard to clothing, the principal points to be observed are that it should be *loose* and *warm*. The abominable custom of compressing the waist and forcing the internal organs out of their natural places, cannot be too much condemned. The clothing should be so arranged that an equable temperature of the body will be preserved.

WET NURSE.—If the mother has a poor constitution, or poor health, she ought not to suckle her child, for it is generally believed among Physiologists that the health and constitution of the nurse, together with the quality and quantity of her milk, has almost as great an influence over the physical and mental organization of the infant as the mother had over the child in utero.

Therefore, if the mother has not the qualities of a good nurse, some one that *has* should be substituted, *and not without*, for there is nothing more unnatural or demoralizing than for a mother who is capable of giving her own child the nourishment and tender care that the CREATOR has ordained for it, from laziness, pride, or self-love, to turn it over to the tender mercies of a stranger.

But a good nurse the child should have; and what are the qualities of one? A woman of at least medium height, good muscular development, not fat, well proportioned chest, full pleasant eye, and cheerful countenance, hair of natural color, even disposition, present health sound, inheriting a good constitution, of good morals, sound teeth and healthy gums, cleanly in her habits, breasts large, clear complexion, and between 25 and 35 years of age.

It is not to be supposed that all these qualities will *always* be combined in one person, neither is it to be advised to reject a nurse who cannot come up to this ideal. This much has been said that we may realize that the qualities of nurse and milk *is not a trival matter*.

The subject of Dental Hygiene has thus been pursued up to the period of child birth. The same principles which has been advocated as a rule for the guidance of the expectant mother and embryo, in regard to food, &c., &c., will also be a sufficient guide through the periods of infancy, childhood and puberty, to adult life.

But a large portion of this vast field is left untouched by my sickle, which for want of time must be left unreaped, for the present, namely: The care of the Temporary and Permanent Teeth during the time of "shedding," which calls for all the Hygienic skill possessed by the profession.

Neither has anything been said in regard to combating the DISEASES INIMICAL TO DENTAL NUTRITION. These must be left to the department of DENTAL THEREAPEUTICS.

ANTIDOTES FOR POISONS.

In the British and Foreign Medico-Chirurgical Review, we find the following statements: Messrs T. & T. C. Smith claim to have discovered a common antidote for prussic acid, antimony and arsenic.

Prussic Acid Antidote.—Take of liquor of perchloride of iron 57 minims (drops); protosulphate of iron in crystals, as pure as possible, 25 grains; as much water as will make a solution of a protosesquisalt of iron, measuring about half an ounce. Dissolve, on the other hand, 77 grains of crystallized carbonate of soda in about half an ounce of water. These quantities destroy the poisonous action of between 100 and 200 drops of prussic acid, officinal strength, in giving first the one liquid and then the other.

Antidote for Cyanide of Potassium.—The antidote for this compound is the same as for prussic acid, except that the solution of protosesquisalt of iron is to be used without the alkaline or soda solution, the prussic (hydrocyanic) acid being already combined with an alkali. The use of the alkali, however, would not be injurious—a harmless yellow prussiate would be formed. In this case, in consequence of the possible presence of free acid in the stomach, the alkaline liquid should be given first. The quantities given, as the prussic acid antidote, would decompose 35 grains of cyanide of potassium.

Antidote for Arsenious Acid, White Arsenic.—Measure out 5 fluid drachms and 7 minims of liquor of perchloride of iron into 2 or 3 oz. of water, then add to the liquid a solution of 1 oz. (about 2 tablespoonful) of crystallized carbonate of soda in a few ounces of warm water, and stir till effervescence ceases. The resulting mixture destroys about ten grains of arsenic.

Antidote for Tartar Emetic.—Mix 5 fluid drachms or teaspoonfuls and 7 drops of liquor of the perchloride of iron with a few ounces of water; then mix in a cream formed of 90 grains of calcined magnesia, rubbed up with water in a mortar; stir till, after gelatinizing, the mixture again gets thin; empty the mixture into a calico or muslin cloth, and press out the liquid; remove the mass from the cloth into a clean mortar, and rub it up with a little water into a smooth cream. In this state it can destroy upwards of twenty grains of tartar emetic. It can also be used as an antidote for arsenic, of which it absorbs about ten grains.

M. Bunsen, an eminent German chemist, and Dr. Berthollet, declare, as the results of their carefully conducted experiments on the subject, that the hydrated peroxide of iron, formed, in the process already given, by the addition of the perchloride of iron to carbonate of soda, is a better antidote for arsenious acid or white arsenic, both solid and dissolved, than albumen is to corrosive sublimate.

Albumen, the antidote for corrosive sublimate, is always at hand in the form of white of egg. The person who has taken a poisonous dose of this mineral salt should immediately swallow as much white of egg, well mixed with water, as the stomach will bear. There is no danger from excess, and even if fresh vomiting should be excited, so much the better. The eminent chemist, Thenard, while lecturing at the Polytechnic School, February, 1825, swallowed by mistake a glass of the concentrated solution of corrosive sublimate. In five minutes whites of eggs were obtained and taken. He vomited repeatedly, but never had any other pain or ill consequence.

VENTILATION.

Look at an asthmatic sitting before an open window; regardless of the cold, though it be winter, with his chest heaving laborously and his countenance expressive of exquisite anguish. What is the matter? Is he in pain? No. What, then, is the distress? It is simply from want of a due supply of fresh air. The spasm in his lungs not only prevents the free admission of air from without, but the free egress of that which is within, so that the air which is in the lungs is a mixture of foul and good air. When so many died in the famous Black Hole of Calcutta, it was because the pure air was so shut out that they even could not get as much as the asthmatic does.

Here we have palpable results, and they startle us; and yet we may be suffering from day to day, in so small a way as to be imperceptible, the evil results of a deficiency of air, which may so accumulate as to impair the health, and even perhaps ultimately destroy life. It is only a few that occasionally lose their lives suddenly from want of air, but a comparatively slight but continuous deficiency in its supply is constantly destroying vast multitudes by slow poisoning.

A good supply of fresh air is an imperative necessity. Such a supply it is easy to get when we are out of doors; but we do not get it when we are indoors unless we make special provision for it—or, in other words, unless we take proper measures to secure free ventilation. A proper supply of pure air in our habitations and places of public meeting *costs something*, at least in cold weather. That is the chief difficulty. Economy is in the way. Less fuel is required with defective than with proper ventilation. A small room, closely shut up, is warmed at less expense than a large room with suitable inlets for fresh air and outlets for foul.

The necessity for freeness in ventilation may be seen if we look at the amount of fresh air required for consumption. Each person requires a gallon every minute, that is fourteen hundred and forty gallons in twenty-four hours. It is easy to see that small and closely shut-up apartments, and large gatherings of people in public buildings, as they are ordinarily constructed, are incompatible with any such supply as this.

That you may see clearly what the necessity for ventilation is, observe what the lungs actually do with the air which they receive.

Pure air is composed of three gases, in certain proportions: oxygen, nitrogen, and carbonic acid; this latter being in very small quantity. These proportions are altered in the lungs, so that the air which is breathed out is different from that which is breathed in. It has less of oxygen and more of carbonic acid. It is less vivifying by the loss of oxygen—that is, is thus negatively injured—and it has also acquired a positively bad character by the increase of the carbonic acid. Much increase of this renders the air palpably poisonous. If, therefore, there be great lack of ventilation, as there often is in small rooms in dwellings or in crowded public assemblies, much injury is done to the health by the diminution of vigor from the loss of oxygen and by the direct poisonous influence of the added carbonic acid. And if the exposure to these deleterious influences be frequent there will inevitably be an accumulation of evil results, seen in a broken-down system, in positive disease, and at length in death.

Observe what provision is made in nature for the constant purification of the air, and how this is often more or less defeated by the arrangements of man. As oxygen is taken up in the lungs of all animals, and carbonic acid gas is sent forth from them, breathing is continually deteriorating the air. But this is remedied by a counter operation. Every leaf that you see is doing just the opposite of what lungs do—it takes in carbonic acid and emits oxygen—so that there is an exchange going on between leaves and lungs. In this way the due proportion of the ingredients of the air is every where maintained, so that if the chemist examine air taken from various quarters of the earth he always finds precisely the same proportions. But this is true only of air that is free, and not of that which is shut up where there are sources of contamination. Wherever there is breathing going on, if ventilation be not properly attended to, there is a want of these natural proportions, and the deterioration is increased by fires and lights, for they, like lungs, use up oxygen and return carbonic acid to the air.

There is still another important provision for the purification of air. The three ingredients of the air are not of the same specific gravity. The carbonic acid gas is decidedly heavier than the oxygen and nitrogen, and therefore has a tendency to lie below them, as water lies below oil. Now if this tendency was not obviated in some way the carbonic acid, generated from lungs and fires and various decompositions, would accumulate all over the surface of the earth, pushing up the oxygen and nitrogen above it, as water does oil, and would destroy life and put out fires every where. But this tendency is obviated by another—the tendency of gases to mingle together. It is just as the heavier water does not remain below the lighter alcohol poured upon it, but mixes with it. Agitation promotes this mingling, and therefore in ventilation the communication of motion to the air is an important measure, and should be accomplished so far as it can be done without inconvenience.

There are other deleterious gases besides carbonic acid produced in various ways, indoors and without, that are carried off by this same mingling and diluting process, but of these we will not speak, the carbonic acid being the most important.

What now is the inference from all this? Plainly that we ought to make it quite as sure that our lungs shall have a suitable supply of good air as that our stomachs shall have a suitable supply of good food. Oxygen, indeed, is food as really as what is put into the stomach, for it enters into the composition of the blood, and through this of the structures of the body. And besides, the carbonic acid gas which is discharged from the lungs is so much refuse, and should not, therefore, be introduced again, but should be carried off by the means which you see are provided so beautifully and carefully by the Creator.

BILIOUSNESS.

With a greater amount of bile in the blood than is natural, the result is that the eyes and the skin begin to wear a yellow appearance, while various other symptoms manifest themselves, according to the temperament, habits, and peculiarities of the individual; one has sick headache,

another complains of a want of appetite, sometimes loathing the very appearance of food ; a third has cold feet and hands ; a fourth has chilly sensations, involving the whole body, or running up and down the back ; a fifth is costive ; women become hysterical, and laugh, cry, or talk, while men are moody, peevish, or morose. Bile is naturally of a bright yellow color, but as a man becomes more bilious it grows darker, and is at length as black as tar, causing a state of mind which the old Romans called *atrability*, *attra* meaning black ; a scowl is on the countenance, and the person is ill-natured and fretful, finding fault with everybody and everything ; hence when a man is cross he is bilious, and ought to be pitied, and at the same time be made to take an emetic.

The ill-natured are never well, they are "bilious," the system is clogged, the machinery does not work well, and both mind and body are disordered. The safest and best method of getting rid of biliousness is steady work in the open air for six or eight hours every day, working or exercising to the extent of keeping up a gentle moisture on the skin. This moisture conveys the bile away out of the system. The same result will be accomplished, but not so well, by a good steam bath, or by wrapping up in bed, drinking hot teas, thus "getting up a perspiration ;" but the atmosphere of the room should be pure, and the diet for several days should consist of coarse bread and fruits. Medicines which "act on the liver" will do the same thing, but they should be advised by the physician, when other means have failed.

The office of the liver is to withdraw the bile from the blood. It is the largest workshop of the body, and is at the right side, about the lower edges of the ribs. When it does not do its work it is said to be "torpid"—asleep—and medicines are given to stimulate it, wake it up, make it act, work faster than common, so as to throw off the excess of bile. When it does not withdraw or separate the bile from the blood the skin grows yellow, also the whites of the eyes, and the man has the "yellow jaundice." When it separates the bile from the blood, but retains it within itself, constipation ensues, appetite is lost, spirits become despondent, and the person is languid, lazy, fretful, and irritable. The liver is in a sense like a sponge, and the bile may be pressed out of it as water out of a sponge, by pressing the ball of the hand over the region of the liver downwards, from hip to "pit of stomach," two or three minutes at a time, several times a day. This is a good remedy in dyspepsia, and also relieves the stomach of wind, giving immediate and grateful relief sometimes.—*Hall's Journal of Health.*

NEW YORK COLLEGE OF DENTISTRY.

The hall of the Young Men's Christian Association, Fifth avenue and Twenty-second street, was well filled last evening to listen to the inaugural lecture before the New York College of Dentistry, located in another part of the same building. This institution was chartered nearly two years since, but from various causes a final organization of the faculty was not effected until May last. This is the first institution of the kind ever established in this city. There are, however, four others throughout the country, the oldest being in Baltimore, with two in Philadelphia and

one in Cincinnati. The faculty of the New York institution is as follows : Dr. E. Parmly, Emeritus Professor of Dentistry and President of the Board of Trustees ; Wm. H. Dwinelle, N. W. Kingsley, Dean of the Faculty ; J. S. Dodge, Jr., Professor Weiss, Dr. R. K. Brown, and Professor Stein. The institution opens with a class of twenty young men. The course comprises two years of study and one of practice in the infirmary, at the end of which time a diploma is given if the examinations are successfully passed. This college presents greater advantages than any other institution of a similar kind, from its location, the privileges enjoyed by the students of visiting the various medical colleges, the extensive apparatus, etc. No such college exists in France, and but one in England which confers the degree of licentiate of dentistry. This institution is the product of agitation on the subject of dental education in the two dental societies in this city which meet weekly.

The exercises last evening were opened with prayer by the Rev. Howard Crosby. Professor Kingsley then made a brief statement of the history of the undertaking, in which he alluded to the facts already given. He said that a peculiar feature of the Institution would be a Board of Clinical Lectures, composed of distinguished Professors of the Dental Art, who will lecture daily, Saturdays and Sundays excepted. The infirmary is intended for the benefit of the worthy poor, who will receive dental treatment gratuitously, save in cases where very expensive material has to be used, when a charge large enough to cover actual costs will be made. Professor Wm. H. Dwinelle then read an address to the students of the college. New York, he said, was the microcosm of this continent, and the fitting centre for the learned professions. As New York is the representative city in medicine, she should be equally so in surgery, and we have resolved that she shall be. He congratulated the young men on their choice of a profession. Surely none could be nobler. It is linked with the kindred profession of medicine. As our teeth are more liable to decay than those of other nations, so in dental science have we made discoveries far in advance of other lands. It is the duty of the dental student not to treat the teeth as separate organs, but as parts of a common system, and, therefore, a general knowledge of anatomy is necessary. To illustrate this, the process of mastication was instanced, and its connection with other functions of the body and their dependence on it, in turn shown. Chemistry in its relation to dental surgery was next considered. Modern chemistry has become the basis of materia medica. In all our studies we should remember the two structures of the teeth, the bone and the enamel. The most destructive articles taken in the mouth are acids. Filing the teeth, or plugging, is an operation of the last importance, and, if rightly performed, should obviate the necessity of any other. Professor Dwinelle then concluded his remarks by a lengthy appeal to the students on the general education and training necessary to the perfect dentist, embodying much good advice. The address, which was long, was attentively listened to, and the new enterprise was inaugurated under the most favourable auspices.

—*N. Y. Paper*

AMERICAN DENTAL ASSOCIATION.

AMONG the proceedings of the Association that met in Boston the 31st of July last, none are more interesting to the Dental profession just now, than those relative to the claim of the Dental Vulcanite Company. The committee on the claims of said Company recommended that a commission of five members be created, with power to raise funds to be devoted to the protection of such dentists as may be prosecuted by the Company, provided satisfactory terms could not be procured. After considerable debate on the subject, the Commission was appointed as follows:—Drs. McKellops, Horne, Lyon, Morgan, and Cushing.

Five days afterwards, near the close of the session, Dr. Morgan, President of the Commission, reported that they had agreed upon terms with the Rubber Company, which required the dentists to pay a royalty of \$2.50 for full upper or lower sets, and \$1.00 for partial sets of six teeth or less, the liability to commence May 1st, 1865. A discount of fifty per cent. to be made on amount found to be due July 1st, 1866. The fifty per cent. actually paid to be refunded in yearly payments of twenty per cent. *from the future payments under the tariff*. The books of the dentists to be examined in case of suspected fraud. He believed Goodyear's patent to be valid, while Cummings' claim was without foundation. The terms he considered the best that could be obtained. A circular, stating these terms would be sent to all dentists. The Commission did not in any way commit themselves to the legality of the Cumming's patent.

The report was then adopted.

Now if the claim of the Company is valid and good, it should certainly derive benefit from it, and these terms ought to be complied with by all practitioners. And those who do comply with them should be protected by said Company. It is wrong to scare some thousands of dollars out of a few timid or conscientious men, *giving a free right to a few prominent dentists* in order to obtain their influence to enable them to get as much out of the profession as they can; and allow the rest who refuse, to go scot free. Under such circumstances what compensation has the dentist, who pays his \$2.50 promptly on every set he makes? His neighbor, who refuses (unless he is compelled to do so) can do his work just that much cheaper, and thus injure the practice of the first.

If the claim is to be tested before a court of law, we hope to see it fairly tried; the defendant to be a bona fide defendant, and not one whose interests are identical with the plaintiff, and his expenses paid by the same parties, in order to obtain an easy judgment. Let even justice be done on all sides, and may the right prevail.

THE PENNSYLVANIA DENTAL PROTECTIVE ASSOCIATION.

AN informal meeting of the Dentists of Philadelphia was held at the Continental Hotel, November 5, 1866, for the purpose of calling a regular meeting of the profession of this city to take action in regard to the Dental Rubber patent. A meeting was called to be held on Monday evening, November 12, but owing to the fact that notices were not properly brought before the practitioners of the city, the attendance was so small that no business was transacted. Another meeting was called to be held on the following Monday evening, November 19. This meeting was very well attended, and the most important business transacted was the formation of an Association, entitled, *The Pennsylvania Dental Protective Association*.

An Advisory Board of seven members were elected with authority to collect funds and transact the business of the Association, but a subsequent meeting being held on the 27th inst., the proceedings were somewhat modified. A committee consisting of the following gentlemen was appointed, viz. :—Dr. S. S. WHITE, Dr. JAS. TRUMAN, Dr. I. LUKENS, Dr. C. A. KINGSBURY, Dr. LOUIS JACK, Messrs. J. R. RUBENCAME, and W. A. DUFF.

The main duties of the Committee, is to raise funds by soliciting contributions from Dentists and other interested parties, to employ counsel to test the validity of the claims of the Goodyear Dental Vulcanite Company.

Now this is something like the right spirit, and as there are already some four or five suits for injunction asked in this city, to be tried before the Courts at the December Term, we hope our friends will come up promptly with the "needful." They can depend upon it that the committee are reliable and earnest men, and if they are only promptly supplied with means, they will see to it that impartial justice at least is done. Any information or points bearing upon the claim should be promptly forwarded. Contributions should be sent to the Treasurer, J. R. Rubencame, Esq., 825 Arch street. Let all hands "put their shoulders to the wheel," and we have no doubt that this annoying and vexed question will soon be settled in a satisfactory manner.

THE Ohio State Dental Association met at Columbus, November 1, 1866, and resolved to decline to accede to the demands of the Dental Vulcanite Company.

INJUNCTION REFUSED.—Judge Nelson, of the United States Circuit Court, of New York, on the 21st ult., refused to grant injunctions demanded under the Goodyear and Cumming's patent, in the case of Dr. T. B. Wait, to restrain dentists from using hard rubber in making dental plates; leaving the thing as it now stands, refusing to interfere at all, prior to a final decision of the case.

THE Illinois State Dental Convention met at Chicago, November 13, 1866, and resolved to take to the Supreme Court, the Goodyear Rubber Patent case.

VARIETIES.

A RASCALLY old bachelor says the most difficult surgical operation is to take the jaw out of a woman.

WHAT is the difference between a summer dress in winter and an extracted tooth? One is too thin and the other tooth out.

A SINGER in the opera chorus who formerly had a very good chest voice, sings now altogether in falsetto. He ascribes it entirely to the dentist, who, he says, gave him a *false set o' teeth*.

CIDER may be preserved sweet, it is said, by adding to one barrel of the cider, a pound of mustard seed, two pounds of raisins, and a quarter of a pound of stick cinnamon.

IN the food department of the South Kensington Museum, stands the "poor man's filter." It is an ordinary flower pot, plugged at the bottom (not tightly) with sponge. A layer of coarsely powdered charcoal, about one inch thick is placed on the bottom of the pot, then another layer of sand of the same thickness, then pebbles; coarse gravel and stones are placed on the whole. This forms an admirable filter, and one within the reach of the poorest.

THE ivory arm chair presented by the city of Lubeck to Gustavus Vasa, was sold in 1825 to M. Shinkel, a chamberlain of the king of Sweden, for 120,000 francs; the Prayer Book used by Charles I. of England, on the scaffold, brought 2,500 francs; the coat worn by Charles XII. at the battle of Pultowa, was sold in Edinburgh for 561,000 francs, and in 1816, Lord Schwartebury gave 16,595 francs for a *tooth* of Newton, which is now set in a ring and worn by the eldest branch of that family.

HUMPHREY'S JOURNAL says that old collodion may be made useful in the following manner: "Add alcohol and ether in equal parts, or a mixture of one-third alcohol and two-thirds ether is still better, until the collodion flows easily, and is thin enough to coat the plate without streaks; furthermore, to each quart of collodion add sixty grains of bromide of cadmium, and put the mixture, after frequent shaking, in a cool, dark place. This collodion probably will become colorless, and works perhaps as well as the best new collodion that can be made.

It is said that an artificial ivory is now made in France from a paste of papier maché and gelatin. Billiard balls formed of this material, though hardly a third of the price of those made from real ivory, are yet so durable and elastic, that they can be thrown from the top of the house on to the pavement, or violently struck with a hammer, without injury. With this same paste, to which the name of Parisian marble is given, among many other things, the finest and most complicated moulding for ceilings can be made, or capitals of columns can be constructed in any color, so as to resemble the most valuable marbles.

It is related in the *Phare de la Loire*, that the mayor of a commune having received a letter from the prefect of his department, enjoining him to take all necessary precautions in case of the cholera making its appearance in his village, he replied that he had already made every preparation. The prefect, not content with this answer, visited in person the above-named commune, and to his astonishment and dismay found that the worthy mayor had caused as many graves to be dug in the churchyard as there were inhabitants in the village.

INDELIBLE WRITING INK.—The following is said to make an excellent indelible writing ink :

R Shell-lac,	2 ounces.
Borax,	1 "
Distilled Water,	18 "

Boil in a covered tin vessel, stirring occasionally until mixed. Filter when cold. Mix the solution (which will be about 19 oz.) with one ounce of mucilage of gum acacia (prepared by dissolving 1 oz. gum in 2 oz. water) and add pulverized indigo and lampblack, *ad libitum*. Boil the whole again in the covered vessel, and stir well to complete the solution and admixture of the mucilage of the gum acacia. Stir occasionally while cooling, then let it stand for two or three hours to allow the excess of indigo and lampblack to subside, and bottle for use. It can be used for writing on paper, parchment, or linen, and is impervious to water, alcohol, most of the acids, and liquor potassæ.

ANTIQUITY OF THE APPLE.—Mrs. Bayle Bernard, author of "Our Common Fruits," a descriptive account of the fruits ordinarily cultivated or consumed in England, brings a careful study of antiquarian lore to the discussion of her subject. The following is a pleasant story about apples:

"As the tree grows wild throughout almost the whole of Britain, and as the name apple (in Celtic, *Abhal*), is considered by the best authorities to be derived from the pure Celtic ball, signifying a round body, it is more probable that it is indigenous to this country than that it was introduced, as some have thought, by the Romans. From time immemorial it has been the badge of the Highland clan Lamont, and in the earliest times a branch of apple was the mark of distinction conferred on the Welsh bards who most excelled in minstrelsy.

"In Saxon times we find William of Malmesbury distinguishing that it was under a wild apple tree that King Edgar once, in the year 973, lay down to sleep, which would seem to imply the existence of a domesticated kind also; and after the conquest traces of its culture soon appear, for a bull of Pope Alexander, bearing the date of 1175, confirms to the monastery of

Winchcombe, in Gloucestershire, their claims on the town of Twining, 'with all its lands and orchards.' In the course of time varieties were probably introduced from Normandy and other parts of the Continent, though little information on the subject is to be gathered from early writers on fruit cultivation; but the oldest existing variety on record in England is that which Phillips apostrophizes as

'The fair Pear-maine,
Tempered, like comliest nymph, with white and red,'

a tenure in the county of Norfolk dated A.D. 1200, having been held by the yearly payments of 'two hundred Pear-maines and four hogsheads of Pear-maine cyder.' The derivation of this name, according to Hogg, is similar to that of Charlemagne (sometimes written Charlemaine), meaning, therefore, *Pyrus magnus*, or the great pear-apple, the shape bearing some resemblance to that of a pear. By the time Henry III, Worcester had become famous for its fruit trees, and cider orchards in Hertfordshire date from the days of Henry VIII; when, also, as Fuller informs us, one Leonard Maschal brought 'pippins' from over sea, and planted them at Plumstead, in Sussex; while so important had their culture become, that in the thirty-seventh year of the same king, the barking of apple trees was declared to be felony.

"It was not, however, till the time of Charles I, that 'orcharding,' as it was called, became general throughout this country, and the seventeenth century may be looked on as the golden age of apples. Evelyn published an appendix to his *Sylva*, under the title of 'Pomona,' which did much to bring the subject under public attention; and by the exertions of the first Lord Scudamore, Herefordshire in particular became, as it had been expressed, 'one entire orchard.' This gentleman being in company of the Duke of Buckingham when he was assassinated by Felton, received such a shock from witnessing this catastrophe, that he retired into private life and devoted all his energies to the culture of fruit. That kind to which he gave most attention was a variety believed to have originated during the seventeenth century, and which was at first called 'Scudamore's crab,' but afterwards the 'redstreak.' It was Evelyn's favorite, also; and, indeed, so much was said and written about it during that century, that a modern author, leaving out of view evidently the fatal gift of Paris, and all that grew therefrom, ventures the bold remark concerning it, that 'perhaps there is no apple which at any period created such a sensation.' Phillips, of 'Splendid Shilling' celebrity, who wrote an entire poem in Virgilian measure upon 'Cyder,' which had also the honor of being translated into Italian, in this very apotheosis of apples, thus exalts this idol of the day:

"Let every tree in every garden own
The Redstreak as supreme, whose pulpos fruit
With gold irradiate, and vermilion shines,
Tempting, not fatal, as the birth of that
Primeval interdicted plant that won
Fond Eve in hapless hour to taste and die.
This, or more bounteous influence inspires
Poetic raptures, and the lowly muse
Kindles to loftier strains; even I perceive
Her sacred virtue. See! the numbers flow
Easy, whilst cheered with her nectareous juice,
Hers and my country's praises I exalt."

"Alas for the power of fashion, even in the matter of apples! The Redstreak is now held but in slight esteem."

TO RENDER WOODEN BUILDINGS FIRE-PROOF.—The number of fires, principally of wooden buildings, in the country, during the past month, suggests that some means should be employed to render them, if possible, incombustible. The following recipes may not be without use to many of our readers :

Fire-proof Wash for Shingles.—A wash, composed of lime, salt, and fine sand or wood ashes, put on in the ordinary way of white-washing, renders the roof fifty per cent. more secure against taking fire from falling cinders or otherwise, in case of fire in the vicinity. It pays the expenses a hundred fold in preserving influence against the effect of the weather. The older and more weather-beaten the shingles, the more benefit derived. Such shingles generally become more or less warped, rough, and cracked; the application of the wash, by wetting the upper surface, restores them at once to their original or first form, thereby closing up the spaces between the shingles and the lime and sand, by filling up the cracks and pores in the shingle itself, prevents it from warping.

Incombustible Wash.—Slake some stone lime in a large tub or barrel, with boiling water; when slaked, pass six quarts of it through a fine seive. It will then be in a state of fine flour. Now to six quarts of this lime add one quart of salt and one gallon of water; then boil the mixture and skim it clean. To every five gallons of this mixture add one pound of alum, half pound of copperas, by slow degrees, three-quarters of a pound of potash, and four quarts of white sand, or hard wood ashes sifted. This solution will admit of any coloring matter, and may be applied with a brush. It is more durable than paint. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick work it renders the brick impervious to rain or wet.

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No. 1.

CARBOLIC ACID.

THIS substance was discovered by Runge, in 1834. It is called also phenolic acid,—phenal—and hydrated oxide of phenyle. It is composed of 12 parts of carbon, 5 parts of hydrogen and 1 part of oxygen, with 1 part of water ($C_{12}H_5O + HO$). It has been used lately as a substitute for creasote by members of the profession in England and America in the treatment of exposed nerves, and as a remedy by injection for alveolar abscess, especially when indolent and persistent. It acts like the latter in exciting callous surfaces, promoting suppuration, and causing the matter to be discharged through the fang canal or through the fistulous opening. It is, for this purpose, diluted with alcohol or warm water, with which it readily unites, care being taken to protect the gums and surrounding tissues by means of napkins or spunk. For injections into the fangs and fistulous openings, we have found the ordinary vulcanized rubber syringes with silver points serviceable—there are, however, more expensive syringes, made of silver with gold points, especially manufactured for the purpose. In the cure of these stubborn abscesses from days to weeks are consumed, requiring the utmost patience on the part of both the operator and the patient, and sometimes baffling the most skillful when taken in the chronic stages.

Carbolic acid being an unofficinal medicine, dentists desiring to experiment with it should obtain it of the chemist or at the dental depots. It is so similar in its properties to creasote that physicians generally prescribe the latter, more from habit we should think, since the former is said to be a purer product of distillation—carbolic acid being manufactured from the oil of coal tar, and creasote from the oil of wood tar.

Dr. Wood gives credit to Prof. F. Grace Calvert, of Manchester, England, for bringing into notice this medicine from one of the refuse matters in the utilization of coal tar. It has been used advantageously in various diseases, in diarrhoea, and to check vomiting, being used for this purpose in the form of a pill. In spasmodic asthma, with a decoction of sarsaparilla. It is especially adapted to cases of diphtheritis and malignant angina. It is also advantageous in anthrax, unhealthy suppuration, and gangrenous

or cancerous ulcers, correcting fetid odors—and we think would be valuable as a preventive of abscess in the filling of fangs, either to inject a drop or two of it, or convey it by means of cotton to the extreme point of the fang previous to the insertion of the filling, since it has been proved efficacious in fistulas and in caries or necrosis. It has been used to prevent putrefaction in organic substances, and the corpse of a man may be preserved by the use of a very small quantity of the acid. It exists in the portion of coal tar which distils over between 300° and 400° Fahrenheit. This when mixed with a hot concentrated solution of hydrate of potassa is resolved on the addition of water into a light oil and a heavier alkaline liquid. This is separated and neutralized with muriatic acid, when carbolic acid is disengaged in an impure state and floats on the surface in the form of oil. Then by distillation from chloride of calcium to separate water, and exposing the distillation to a low temperature, the acid congeals in the form of a colorless, crystalline mass disposed to deliquescence. It is then separated from the accompanying liquid by pressure in bibulous paper. At 95° this melts and constitutes the acid in its liquid form. It is freely dissolved by alcohol and warm water. Its aqueous solution coagulates albumen, arrests fermentation, and protects animal substances from putrefaction. When injected it produces sharp burning pain.

Dr. W. H. Waite, of Liverpool, England, furnishes extracts from a paper read before the Odontological Society of Great Britain, by Mr. Woodhouse, of London, "On the use of Carbolic Acid," as follows: "The cases where carbolic acid are most useful are those in which the pulp is exposed, and when without its aid, the general practice would be to destroy. The plan adopted is as follows: When in preparing a tooth the pulp is found to be exposed, remove the decay so as to thoroughly expose the pulp, but if possible to avoid wounding it; then syringe the cavity, dry it with cotton wool, having another piece ready to hand on a probe saturated with carbolic acid, which at once place in the cavity, so that it may with its full strength act on the surface of the pulp (should there be any pain it generally passes off in a few seconds); then press it gently, so as to squeeze the carbolic acid into the pulp, place another pledget of cotton wool over it and leave it there ten minutes or so: this repeat until the pulp appears whitish and dry. The tooth may then be at once plugged in the following way (should it not have been aching previously). If the cavity be deep as in the grinding surface of a molar, place a small plug of cotton wool moistened with carbolic acid over the pulp, and on this a thin piece of gutta percha; dry the cavity with amadon, and at once stop with osteoplastic—pain may be felt, but it will soon subside. . . . The advantage of osteoplastic over metal stopping is, that it is comparatively a non-conductor. On removing these

plugs, after a few months, the exposed pulp will often be found thoroughly ossified, and a gold filling can be successfully made. In cases where it will be impossible for the patient to return in the course of a few months, a gold stopping may at once be put over the osteoplastic, or amalgam may be used in the same way to protect the surface. The treatment is most successful where the pulp is quite healthy and only recently exposed, but it is also effective when the exposed surface is suppurating. In these cases great care must be used to thoroughly cauterize the nerve, and in bad cases, it is sometimes safer to fill with cotton wool only for a day or so, but it is generally preferable to fill at once. When the pulp has wasted into the cavity, it is perhaps better to destroy it with arsenious acid, as the carbolic acid can scarcely be relied upon. . . . Carbolic acid is also exceedingly useful in rendering the fresh prepared surface of the cavity of tooth less sensitive before filling it. A tooth which is aching severely from the operation of removing the decay, with the nerve not uncovered, will be most instantly freed from pain by placing a small plug of cotton wool saturated with carbolic acid in the cavity. Not only is the patient immediately relieved from pain, from the surface being cauterized, but the tooth is much less sensitive to the alternations of temperature after stopping. . . . The dressing should not remain less than five minutes in the tooth, and if fifteen minutes it will be better. . . . Mr. Gibbons has very successfully applied carbolic acid to arrest the secretion of pus from the stumps, and has afterwards filled them with gold, with the best results; but I have not yet so applied it. In all the foregoing cases, carbolic acid of full strength, rendered fluid by the addition of a little eau-de-Cologne, has been used; but it is very valuable in a diluted form (1 part carbolic acid, 40 parts water) as an injection for sluggish abscesses, inducing healthy action."

Creasote has been used for years for the most, if not for all of the above purposes, by American dentists; and it is no new thing to save teeth with living nerves by sealing cotton and creasote over the pulp with a non-conducting filling; but if carbolic acid is found to answer the same purpose and to be a purer substance, it will no doubt in course of time be substituted for it, and be placed among the officinal medicines. A. T.

OPERATING FOR THE REMOVAL OF PULP.

BY DR. C. C. ELLISON.

MESSRS. EDITORS:—I design some remarks upon the subject, which is one of the most important in the whole range of professional investigations. I wish to be understood as only attempting to burnish up some familiar ideas, and then I shall proceed to state my own way of removing the pulp from a cavity.

A very respectable practitioner says that the best method for destroying pulp in cavities, is to use chemically pure arsenic. He first exposes the nerve, and then applies a small piece of arsenic—about as big as a pin head—on cotton, which he covers with cotton previously mixed with a strong solution of collodion. After leaving it in the cavity five hours, he removes it, and operates upon the pulp.

Another operator carefully exposes the nerve as much as possible, and then applies morphia and arsenic, mixed in equal quantities, and then closes tightly with wax. He leaves this in the cavity twenty-four hours. He uses great care in exposing the nerve before applying the arsenic and morphia as it prevents pain in removing the pulp. He is opposed to the use of tannin. In one stubborn case, he had to make three applications, and then had to use alcohol and creasote mixed with tannin.

Some practitioners will not use arsenic, as they assert it has a bad constitutional effect. In this I entirely disagree with them. Arsenic is one of the best escharotics in the pharmacopœia. Like other powerful destructive agents it requires great judgment and knowledge to enable one to use it properly. We know more than one veteran dentist who owes his success to this agent. Some dentists use the twentieth part of a grain as a safe quantity to apply, and who consider two hours long enough in soft white teeth. In dense teeth they leave the arsenic in twenty-four hours.

A dentist in whom we have confidence uses arsenious acid and morphia, which he applies on a small piece of cotton; he then covers loosely with a small piece of cotton (previously saturated with sandarach varnish). When the tooth has straight fangs he bids the patient to return in twenty or thirty hours, when the tooth has crooked fangs he leaves the preparation in the tooth longer. This gentleman thinks the action of arsenic extends through the dentine. It is vitally necessary to close the opening in the cavity after the arsenic is introduced, so that the saliva cannot get to it.

Another operator prepares the cavity by fully exposing the pulp; he then makes a wooden concave cap just *in* the opening of the cavity; he then places the arsenic under this cap on the nerve, and seals over this wooden cap with wax. When he destroys the nerve in approximate cavities, he inserts a wedge carefully between the teeth, thus keeping the arsenic in its place.

I now explain my own method of using arsenic. I first remove all the decay from the cavity, so that the agent may act directly upon the living pulp. Any foreign matter between the agent and pulp renders the agent inert. I prepare my paste by this formula.

Arsenious Acid, 20 grains.

Sulph. Morphia, 12 grains. Mix with sufficient quantity of Creasote.

Grind the arsenic mixed with a sufficient quantity of creasote twelve hours in a wedgewood mortar, then add the morphia and grind to the thickness of cream. Moisten a bit of cotton as big as a pin head, and you have the quantity to put in the cavity. The paste improves by being kept on hand some time. I secure the paste in the cavity with cotton. I let the paste remain in the tooth thirty-six or forty-eight hours. In some cases twenty hours is enough. If the paste is left in the tooth too long it gives a muddy color to the tooth.

I cannot always remove all of the pulp the first time because of the pain. Then I wait a few days, and try again. When the dead fragments are all removed, and I get as far down the root as I wish, I proceed and plug the tooth. When it bleeds again I apply a little creasote, or pass a thread down to the roots and leave it there one or two days. Sometimes I have to go down the cavity one-third, two-thirds or three-fourths the depth. In the teeth which have cylindrical roots, I have to clean deeper than in the teeth which have flat roots. When I find anything like ulceration, I treat with creasote.

REMARKS ON THE USE OF RUBBER, &c., &c.

BY DR. E. C. PAYNE, N. Y.

Editors Dental Quarterly.

GENTLEMEN:—Permit me to make some suggestions through the medium of the *Quarterly* to your readers. My ideas will be found more suggestive than declaratory. You will see that I am not the exponent of any particular "hobby."

The question is often asked by the anxious dentist, Why is it, that with the same vulcanizer, the same amount of heat, and the same time, my rubber comes out sometimes too hard, and sometimes too soft?

Having used rubber since its introduction, I wish to give the results of my experience. When I began to use rubber, I used shellac in coating my models. Dr. Wildman, of your city, assured me that shellac spoiled my rubber, and I have since used *sandarach* varnish on my models. I always select *coarse* plaster for placing in my flasks, as I find coarse plaster crystallizes, and as it is softer, I can cut it more easily. I want to caution my young friends, who use rubber the first time, against being in a *hurry* when they vulcanize. If the rubber is thick and you hurry it at a high heat, the rubber becomes porous. I have found that I can succeed best when I heat my vulcanizer to 335 degrees, and take from forty-five minutes time to fifty minutes. When I use my vulcanizer the first time, I observe carefully where the mercury reaches when the vulcanizing is right, and make a notch there with a file. I am guided better by the notch than the scale.

Thick pieces of rubber must have longer time and a much lower degree of heat than thin pieces. I once placed a thin piece beside a piece of half inch rubber, and vulcanized forty-five minutes. The thin piece came out good—the *thick* was spoiled. I once vulcanized a piece of rubber an inch thick for over five hours at 280 degrees, and found it good. One case I made for a patient, and vulcanized it thirty-three minutes at 360 degrees. The lady wore it six months, when she complained that it had a metallic taste. I then vulcanized it twenty-eight minutes more, and it was all right. I sometimes hear dentists complain that the rubber separates from the teeth. I always boil my flasks in water before packing. The separation I believe is caused by wax and oil.

A dentist of our acquaintance uses *soap*, and says it makes a good coating for his models. Another, in whose judgment we have confidence, tells us when the rubber is hard in some places and porous in others, he lays

the blame to overheating the flask when he is packing. When his vulcanizer leaks he keeps up the heat by adding more heat under the vulcanizer.

I have been long satisfied that *steam* is not positively necessary to enable one to vulcanize. Some years ago we vulcanized with a Hayes' Vulcanizer, with the safety plug blown out, but it took us much longer.

We would be pleased if any of our friends would give us some hints on this matter in the *Quarterly*.

January 23, 1867.

EXTRACT FROM THE OPENING REMARKS OF DR. J. ALLEN,

President of the Clinical Board of Lecturers in the New York College of Dentistry,
November 6, 1866.

Everything has a beginning,—this world had a beginning,—man had a beginning,—governments and various institutions for the benefit and improvement of mankind had their beginnings, and dentistry had also a beginning, which dates back some four hundred years before Christ. Hippocrates and Herodotus were among the Greek writers upon the subject of the teeth. And from among the Romans we have the writings of Pliny, Martial, Horace, Celsus, and others. And gold fillings have recently been found in the teeth of mummies, which must have been inserted more than two thousand years ago.

At this ancient date, artificial teeth were made of bone or ivory, secured in the mouth by means of ligatures made of flax, silk, gold or silver wire, and tied to other remaining teeth in the mouth. About one hundred and fifty years after Christ, Galen wrote upon this subject, but his writings showed that very little improvement had been made during the previous five hundred years. During the next fourteen hundred years various authors wrote upon this subject, whose writings set forth nearly the same methods as those adopted by the Greeks and Romans. In 1579, Parie, a celebrated French surgeon, wrote a very correct essay upon the teeth. He enjoyed a great medical reputation, and was appointed Surgeon in Ordinary to Henry the Second, which office he held under three succeeding kings. His cure for the toothache was to thrust a hot wire into the nerve cavity, or to make an application of the oil of vitriol. He also taught the doctrine of transplanting teeth. In this operation the decayed tooth is first extracted, immediately after which a sound tooth is taken from the mouth of another, (generally a servant), and inserted while warm and fresh into the socket just vacated for its reception. If this operation is well performed, under favorable circumstances, the transplanted tooth will, in a few weeks, become united with the socket, and remain firm for many years. But this method has become obsolete, and also that of tying in artificial teeth with strings or wire. Artificial teeth made of bone or ivory, were objectionable on account of their unnatural appearance, their liability to rapid decay in the mouth, and consequent tendency to become offensive. These objections led to the introduction of porcelain or incorruptible teeth, which were first conceived by Duchateau, in 1774, but not being a dentist, he was unable to carry out his theory practically, although he made some specimens that

were capable of being worn, for which the Academy of Medicine of France, granted him the honor of a seat.

M. de Chemant, a practical dentist then in Paris, took up the idea where Duchateau had left it, and finally succeeded so well that he obtained a patent some twelve years after from Louis the Sixteenth. Other dentists in France, have also contributed to the development of this branch of dental practice.

Thus we see in taking a bird's-eye view of the past, that during all these two thousand years or more, very little advancement was made. This was probably owing to two causes. In the first place, there was comparatively very little dentistry done until within the last century. And in the second place, this specialty was kept as a kind of secret in the hands of a few. Hence the slow march of improvement that marked its course for many centuries. The necessity for a more liberal diffusion of knowledge upon this subject, became so apparent to some of the most prominent members of our profession in this country, that they determined to break down the barriers which had so long existed, and by means of a more liberal policy diffuse dental science, art and literature, to all who desired to enter the dental profession. Step by step progressive movements have been carried forward to the present time. The first important one taken was to employ the power of the press in order that dental knowledge might be diffused throughout the length and breadth of the land.

In 1839, a dental journal was established upon a broad and liberal basis, which was called the "American Journal of Dental Science." The next step was to establish a dental college in the city of Baltimore, which was the first of the kind in this or any other country.

In 1840, a national association was formed, called the American Society of Dental Surgeons. Connected with these enterprises were men who will ever be revered for their great and good works. And when long years shall have passed away, history will still point the reader to a Harris, a Bond, a Haydon, and others, whose memories will be ever cherished by the dental profession.

Without experience, without precedent as to the practical workings of these progressive movements, the determined efforts of those men who took these advanced steps have been crowned with success, for we now have in this country about forty dental associations, several journals devoted to dental science and literature, and five dental colleges, all now in successful operation.

Our example has been followed to some extent by others of our profession in Europe, and they now have one dental college, two or more dental associations, and two or three journals devoted to this specialty. True, all has not been done that could be desired, still much has been accomplished, and more yet remains to be attained. And now, as a profession, we seem to have reached a stand-point from which we can look back and see where we have been deficient in the past, what should be done at the present, and the probable results which will be likely to follow in the future. As to the present, we believe the time has come when another advanced step should be taken which will secure a still more thorough and practical dental education for young men who desire to become dentists.

This proposed advance presents a new and important feature, which is

designed to meet the peculiar wants of our profession. This new feature consists in having two distinct bodies of professional teachers, instead of one as heretofore in similar institutions. The one a regular corps of professors who will unfold to the students those fundamental principles which lie at the foundation of dental science.

The other to consist of a clinical board whose duties are to induct the pupils into all the minutiae of dental practice. This new phase of having a clinical board of instructors to form a distinct and important branch of a dental college, is the beginning of a new era in the history of our profession; and the success of this movement will depend very much upon you young men who are to be the recipients of this enterprise, and the record which you will make for yourselves, will determine in a great measure the feasibility and importance of this movement. And we confidently hope and believe that you will apply yourselves diligently to the duties and labors which are before you, and that every effort will be made on your part to improve the opportunities which will be afforded in this institution.

Relying as we do upon your honesty of purpose, assiduity, integrity and gentlemanly deportment, we pledge you in return our best efforts to help you onward as rapidly and as thoroughly as your best interests will permit. And may our mutual relations here be such that you will ever cherish a fond remembrance of your Alma Mater.

DEATH OF JOHN R. McCURDY.

McCURDY.—In this city, on Sunday, the 27th instant, Mr. JOHN R. McCURDY.

When the notice above was cast upon the winds by the press, we can realize its startling effect upon the members of the Profession, to whom he was so favorably known.

Mr. McCurdy, has been so intimately connected with the dental profession for more than a quarter of a century, that a brief notice of the events that have transpired during that period, seems to be necessary to enable us to view his character and life in a fair light.

Twenty-five or thirty years ago, when this remarkable man, in connection with his recently deceased partner, in New York, began to manufacture teeth, in a small room at Eighth and Race streets, Philadelphia, dentistry, as a science, was most imperfectly comprehended. A few earnest men,—Drs. Townsend, Harris, and Palmer, now deceased, and a few gentlemen now living, whom it would be invidious to name,—in our large cities, kindling with the glow of earnest desire to rid our profession of its ignorance and sloth, had begun to exert themselves in reflecting the light of science upon dentistry, but the great masses of those practicing dentistry were steeped in ignorance to an extent that seems impossible at the present day. The dentist's tools were limited, in a majority of cases, to a lance and key. He was expected to shave you and draw your teeth with equal facility. Dental literature was almost unknown. Of dental and medical books, of anatomy, of dental therapeutics, of those laws of nature in health and disease, which underlie our whole science; of those *principles* which so vitally affect the health of the patient, the dentist of thirty years ago knew little more than an ordinary barber. We are speaking of the *masses*. We do not

allude to the honored and exceptional cases. *Conservative dentistry*—that *great blessing* of to-day—was not thought of. If the patient was an adult, a tooth that might have been kept useful for a score of years, in preserving the contour of the face and assisting mastication, was removed *instantly*; if a child, the deciduous teeth were removed to the permanent mischief of the face for a lifetime.

The manufacturers of artificial dentures partook of the apathy which characterized the dental profession. One or two manufacturers had succeeded in making bungling substitutes for the natural teeth. If the dentist declined to spoil his eyes and hands in attempting to make his own teeth, he might, if he had patience, after a few weeks, secure some *single teeth*, at fifty cents each! We well remember, when, after a long sitting, in a manufacturer's sale-room, a dentist was permitted, as a special favor, to pick a "set" (if he could) out of a sieve, hot from the furnace, at fifty cents a piece for old fashioned gum teeth! Sometimes, with a view of giving a pleasing variety to the affair, the dentist burned his fingers in fishing about the bottom of an old hat to make up his "set."

In this depressing state of things John R. McCurdy, then a young man, made his appearance as worker in the industrial hive. Never was a man better fitted by Providence, to assist the capable and thoughtful gentlemen who so steadily sought to elevate the dental standard, than Mr. McCurdy. His quick eye and inventive mind in a few years made him "master of the situation." The leading minds who had been groping about in the dawn of dental light, recognized him as a co-laborer. His correspondence brought the idea of the thinkers and workers in the profession to his busy brain.

The improvements made by Mr. McCurdy in his manufactures, great as those improvements were, were but the *least* of the benefits he conferred on the profession. His eminently practical mind planned a vehicle for the transmission of dental intelligence, and the *Dental News Letter* had its existence—one of the first and *best* dental periodicals in the country. It is difficult for the dentist of to-day to realize the benefit conferred on dentistry by the long and regular publication of the *News Letter*, as it was the first and *only* disseminator of ideas between the distant members of the profession, for many years, its influence was incalculable. It did more to break down the barriers of suspicion and distrust then existing, than perhaps any periodical devoted to our speciality. With as much tact as modesty, Mr. McCurdy never claimed that the ever welcome *News Letter* was a *perfect* paper. He claimed only to faithfully reflect and mirror forth the features—"the age and body of the times." He never assumed the duties of the "school-master" in his paper. The *News Letter* reflected the discoveries, the improvements, and the weakness of the times. It caught the ideas of the day in their *nascent* state. It was a faithful and true witness, and the *News Letter* was most *effective*.

Dental schools found in Mr. McCurdy a warm and steady friend. It may now be said without detriment to the earnest gentlemen who instituted one of our dental schools, that they were indebted to Mr. McCurdy's generosity for the use of their place of meeting, rent free. His advocacy of dental education was so intense that many of us remember how in the session of '55 and '56,—long after the usual pecuniary necessity for such a proceeding had ceased to exist, he devoted his over-tasked mind and

hand to the labors and studies of dentistry, graduating at the school he had labored to establish.

The life of Mr. McCurdy is a splendid illustration of what a man coming from the ranks without the adventitious aids of education, wealth, or assistance, can accomplish by patient effort. He labored because he *loved labor*, and his labor was limited by his ability to perform it. He has left the world wiser and better by his great example.

We cannot close this imperfect sketch of the life of a Great man more properly than by quoting the words of Carlyle:

"Work is of a religious nature; work is of a *brave* nature, which it is the aim of all religion to be. All work of man is as the swimmers—a waste ocean threatens to devour him, if he front it not bravely it will keep its word; by incessant wise defiance of it; lusty rebuke and buffet of it, behold how it loyally supports him, bears him as its conquerer along! 'It is so,' says Goethe, 'with all a man undertakes in this world.'

"Wheresoever thou findest disorder, there is thy eternal enemy; attack him swiftly, subdue him; make order of him; the subject not of chaos, but of Divinity, intelligence and Thee. The thistle that grows in thy path, dig it out that a blade of useful grass, a drop of nourishing milk may grow there instead.

"But above all, where thou findest ignorance, brute mindedness, stupidity, attack it, I say, smite it wisely, unweariedly, and rest not while it lives and thou livest; but smite, smite in the name of God.

"The deep, death-kingdoms, the stars in their never ending courses, all space and all time proclaim it with silent continual admonition. Thou, too, if ever man should, shalt work while it is called to-day, for the night cometh wherein no man can work."

G. R. WELDING.

Summary of Dental Intelligence.

Condensed Notices of Improvements in Dentistry and the Kindred Sciences, from the latest discoveries of American and Foreign Authors and Operators.

BY GEORGE R. WELDING.

DECISION OF THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.* PRELIMINARY INJUNCTION GRANTED.—Henry B. Goodyear, Administrator of Nelson Goodyear, deceased, *v.* Thomas O. Hills. The motion for a preliminary injunction in this cause came on to be heard upon the bill, exhibits, and affidavits of the complainants, the affidavits and exhibits of the defendant, and arguments of counsel; whereupon it is ordered and decreed by the Court, this 22d day of December, 1866, that the motion

* This Court displaces, and is in lieu of, what was formerly the "Circuit Court for the District of Columbia." The Judges are, Olin, of New York, Fisher, of Delaware, another of Ohio, and one—Wylie—of the District of Columbia. There are five in all. It was organized in 1862, '63. All judges must be respected. Let us hope for better things when we "get higher."

for a temporary injunction be allowed, subject, however, to be dissolved on motion of the defendant upon reasonable notice, and on giving to the complainants security to the satisfaction of the Court that he will keep and render an account of all plates for artificial teeth, gums, palates, etc., made of hard rubber in pursuance of the invention described in the letters-patent in the bill mentioned, and will pay the said complainants such sum for the use of said invention as may be adjudged and decreed to be paid on the final hearing of this cause. By order of the Court.

THE USES OF IODINE IN DENTISTRY.—This most valuable alterative, or perhaps we had better call it *resolvent*, was unknown before 1812. Courtois, a manufacturer of saltpetre in France, discovered it first, but it remained for the analytical minds of Davy and Guy Lussac to determine that it was a simple element. It is now procured, chiefly, from kelp (an impure carbonate of soda) and from sea-water. It is found in many mineral springs, in the waters of Saratoga, all of the mollusca, sponges, &c., &c. When the soap makers use the kelp, they take the dark colored residual liquor, and they find it contains iodine in connection with potassium and sodium. When a sufficient quantity of sulphuric acid is added, hydriodic acid is obtained, and then decomposed.

At the ordinary temperature of the air, iodine is a solid. It has a bluish color, is soft and friable, and though not a metal, has a metallic lustre, and from its effects on the system may be placed in the class of *Escharotics*. It melts at 230° and will volatilize at 345° . Its fumes are very dense, and more than eight times as heavy as air. The student may curiously amuse himself in regard to its dense fumes, by placing a few grains of iodine in a glass matras, and heating it over a few coals. It renders vegetable colors yellow.

Like many of the mineral poisons, iodine acts powerfully upon the animal system as an irritant poison, but may be employed medicinally with great advantage.

To the physician, iodine has proved a most valuable assistant. It is rarely administered in its free state—usually with potassium—iodide of potassium.

Iodide of potassium is prepared by adding iodine to a hot solution of potassium until the alkali is completely neutralized, and exposing the dry mass to a gentle heat in a platinum crucible. The fused mass is then dissolved out by water and crystallized.

Iodine is of great benefit to dentists. In cases of abscess and periostitis the official tincture is highly commended. In diseases of the antrum the compound tincture, *largely diluted*, may be injected into the cavity with good effect. When used externally, a preparation of iodine, prepared by mixing together aqua ammonia and the compound tincture of iodine in equal quantities, will produce a substance that will not color the skin, as the preparation is entirely destitute of color. The ingredients must settle after they are mixed.

In cases where the patient gives indication of scrofulous or syphilitic affection, the application of iodine is indicated.

Iodine should be given in solution. It may be taken in almost any vehicle that suits the patient. Six grains is a dose for an adult. A drachm

of the salt may be dissolved in water, and a teaspoonful given three times per day. It will be understood that we are speaking of the iodide of potassium. We would not suggest the administering of iodine in a free state. In cases where the alveolar processes manifest disease iodide of potassium has proved of the greatest benefit.

We know of no condition of the system which will require the dentist to prescribe iodine *internally*. As we have said, the salt (iodide of potassium) is the form in which it is given. It passes so readily into the circulation, that it may be detected in the blood and secretions, readily. When found in the blood and secretions, it is never found "free," but as an iodide or hydriodate.

EXPOSED PULP.—The invariable indication, in treating an exposed pulp, is to devitalize by escharotics, and then, with delicate and properly constructed instruments, to thoroughly extirpate it. Of escharotics, the arsenical paste, in the hands of the majority of practitioners, has proved the most efficient; one application, as a general thing, proving all-sufficient. Cases, however, occur, in which the entire pulp is not reduced so easily to an eschar. A large portion will be found in that condition, but some distance up the root there still remains a part that must be removed, and yet is exquisitely sensitive to the touch of an instrument. Regarding a second application of the arsenical paste as quite objectionable, we have lately adopted the use of nitric acid in such cases with decided advantage. In applying the acid, a delicate piece of broom-corn is used. This, having been previously dipped in the acid, is forced as far up the root as demanded, and a perfect eschar of the remaining portion of the pulp is effected. The toughness, thinness, and pliability of the broom-corn admirably adapts it for the purpose indicated.

In conclusion, we would suggest that "wounding the pulp in excavation is a matter" of considerable moment to the patient, if not the operator. The intense suffering that is experienced by the slightest touch of an exposed nerve, should be sufficient to induce the humane and considerate practitioner to manipulate in the most delicate and gentle manner, whilst engaged in removing foreign substances from the cavity of decay prior to making an application. If, notwithstanding this care, the pulp should be wounded, and severe pain induced, instead of applying an escharotic at once, the patient should be dismissed until the next day with a narcotic application to the aching tooth.—*J. D. White.*

EFFECTS OF ALLOYS WITH GOLD.—*Iron* mixed with gold, makes it hard, and more easily hammered. Color, dull, dead white—they expand by union.

Zinc makes gold brittle. Color, dark brass—contracts in uniting. Zinc makes gold as brittle as clay.

Tin makes gold brittle. Color whitish—they contract by union.

Lead in any shape or quantity spoils gold. The *jumes* of lead destroy the ductility of gold.

Copper mixed with gold is the most useful of all the alloys of gold. It wears better, is more ductile and malleable than pure gold.

Arsenic and *Antimony* destroy the color of gold and make it worthless, and so of most of the other metals.

TEMPER YOUR INSTRUMENTS.—How to put the best cutting temper in an instrument. If you want the shank of your excavator tempered, heat them as high as you wish, put them in oil, polish, hold the edge of the article you want tempered against a piece of cold iron, draw the temper from the shank over a spirit-lamp. In this way, if you are careful, you can draw the temper almost to the edge of the instrument.

DOES A MAN SUFFER AFTER HIS HEAD IS CUT OFF?—The *Scientific American* devotes a chapter to this lively and pleasant subject. Our friend of the Steam Engine and Patent Office thinks that Dr. Guillotin, who introduced the instrument that bears his name, made a mistake when he supposed that a clean shave from “Madame the Barber” was altogether so nice and comfortable an affair. The French Academy of Sciences has been discussing the question, and experiments made in the shambles of Paris prove, that although sensation must be instantly destroyed below the division of the spine, yet the sensorium continues active more than a minute. The facial muscles are contracted, the respiratory organs of the face work, the mouth opens and closes, the animal exhibits intense agony and a desire to breathe. The eyes show sensibility—shutting at the approach of a finger, and opening when it is withdrawn. This reminds us that the story may be true which is told of the fierce woman in France who spat upon the executioner after her head was cut off—and the State prisoner in England, who when the axeman cried out, “This is the head of a Traitor,” replied, “That’s a lie,” or, sadder still—of that beautiful woman of France, who when the headsman held her head up to the gaze of the mob, exhibited on her cheek the crimson mark of Shame!—may not have been fables!

Who will suffer decapitation for the benefit of Science?

Step up, gentlemen! Who’ll be the next to offer?

SPUNK is the best absorbent we can use for drying out dental cavities. Cut it in small thin strips—put it over the salivary ducts, around the teeth under the lips, &c., &c.

GOLD PLUGS.—A loose pellet, of unadhesive gold, large enough to fill a cavity, will be found useful in many cases to be introduced *first*, into which small pieces of adhesive gold can be forced, to which others will adhere. This is especially useful in cases where you cannot fix an adhesive first pellet in the anchorage. Gold *mixed* in this way will be found *very* desirable by those who will try it in suitable cavities.

DENTAL SYPHILIS.—A boy, eight years old, is my patient for operations on his teeth, which are poor. The temporary teeth are all decayed, excepting the canines. Sixth-year molars decayed; incisors erupted, but not in position; incisors are all badly *notched*; a pretty sure *mate* for hereditary syphilis. This boy has sores on both legs, so that he is quite lame.

Men who disobey the laws of God curse their posterity to the third and fourth generation!—*H. S. Chase, Iowa City, Iowa.*

COMPOSITION OF U. S. COIN.—The gold coin of the United States is thus formed: gold ninety parts, silver two and a half, copper seven and a half. The silver coin is thus composed: silver ninety parts, copper ten.—*Ibid.*

SWALLOWING A GOLD PLATE AND SEVEN TEETH, WHICH PASS THE WHOLE LENGTH OF THE ALIMENTARY CANAL!—The *Med. and Surg. Reporter* relates the case of a man in Illinois, who, while in an epileptic fit, swallowed a gold plate, containing seven teeth. The physician writes: "I ordered castor oil and other cathartics, forbid the use of solid food, made him subsist entirely on light soup, broths, &c., and made him drink copiously of slippery elm water. In one week the perfect plate, teeth and clasp, passed into his stool, and he is now wearing them (after a good washing we suppose). He complained of considerable pain while the singular passenger was in transit. The most singular part of the affair is, that the hooks on the ends of the plate did not attach their points in his œsophagus.

BATHS FOR ELECTRO-PLATING.—*Gold Bath.* Dissolve sixteen ounces cyanide of potassium in one hundred ounces of distilled water, filter and introduce in the liquor one ounce cyanide of gold, carefully prepared, well washed and dried out of the light; keep the liquor in a bottle well corked, shake it often and keep it out of the light at a temperature of 59 to 77 degrees. After two or three days the solution is complete and can be used.

Silver Bath. In one hundred ounces of distilled water, dissolve ten ounces of cyanide of potassium, add to it, by small portions, one ounce of cyanide of silver well diluted with distilled water; let it macerate for two or three days, and then it is ready for use.—*Journal of Applied Chemistry.*

SCORBUTIC AFFECTION OF THE GUMS.—Take of infusion of roses, six ounces; borax, one ounce; honey of roses, one ounce. Mix, for a gargle.

PARAFFIN FOR GLASS AND CORK STOPPERS.—The ground stoppers of caustic alkali bottles incrustate very rapidly; the grease stops it but imperfectly, and introduces fatty bodies in the lye. Paraffin is the best agent, because lye is without action on it, and lubricates perfectly the surfaces in contact.—*Ibid.*

SPONGY PLATINUM.—The following method is recommended for preparing spongy platinum: when sal ammoniac is added to a solution of platinum in aqua-regia, a precipitate consisting of the double chloride of platinum and ammonium is formed. If this double salt be heated to redness, its volatile constituents escape into the atmosphere and leave the platinum behind in porous and slightly adherent masses—as spongy platinum, in fact.—*Ibid.*

SOME HOPE FOR US.—In the doings of the Connecticut State Dental Association, some gentlemen hint at relief from our present yoke of bondage to the Goodyear Rubber Company.

Dr. Hill, of Norwalk, thought there would long before be invented a substitute for rubber for dental purposes. The hardships now suffered by the members of the Association would, he believed, lead them to make new efforts to produce some new article to be used in its place.

Dr. Woolworth said that he had been informed by Dr. Earle, the patent agent in New Haven, that a Mr. Simpson, of Bridgeport, had produced a hard kind of rubber in a way that did not infringe on the Goodyear patent. It was produced by putting a porous horny substance in the rubber instead

of sulphur, and that it would answer for dental purposes. It was a very light substance and was fused with clear rubber by the means of heat.

Will some of our profession act upon this hint? This grievous bondage to Henry B. Goodyear will not always last.

THE RUBBER QUESTION—PRELIMINARY INJUNCTION GRANTED.—It will be remembered that the American Dental Association met at Boston on the last of July, 1866, and appointed a Commission of Conference to treat with the Dental Vulcanite Company, in relation to the tariff of charges upon the use of the Vulcanite Company's material. After five days conference, it was announced that they had come to terms with the Hard Rubber Company—and *hard* term they were for us. The terms were—that Goodyear was to receive \$2 50 for each full upper and lower set, and \$1 for every set of six, or less. We had hoped these greedy, exorbitant, and most *oppressive* terms would be abated by the decision of the Court. It will be seen in the case of Goodyear *v.* Hills, December Term of the Supreme Court of the District of Columbia, that the Court has granted a temporary injunction, in favor of Goodyear, subject to be dissolved on application of Dr. Hills, and on giving "Goodyear security that he will keep an account of all plates, &c. &c., and will pay Goodyear such sum for his invention as shall be awarded at a final hearing of the cause."

TOOTH DISCHARGED FROM THE CHIN.—In the report of the Lycoming County Medical Society, in the *Trans. of the Med. Soc. of Penna.*, Dr. S. Pollock states: "A lady of my acquaintance residing near Williamsport, when a young girl had an abscess on her chin. It was very painful, and, after the usual application of warm fomentations and poultices, was duly opened. This occurred about forty years ago. After some time the wound healed. No more attention was paid to it for several years, when it again made its appearance in the same place, and was again opened, yet remained painful for a long period, but finally healed, and for a number of years appeared well. The chin, however, again became inflamed, suppuration occurred, and since that time, for nineteen years, there has been a thin watery putrid matter discharging constantly. In May, 1854, she accidentally received a blow on the chin over the spot affected, which caused her a great deal of pain for the space of six weeks; at the end of which time, to her great surprise and astonishment, a tooth, a natural tooth, protruded through the orifice in her chin,—the apex of the tooth first making its appearance. It resembles an incisor tooth fully developed. In a short time the wound healed, and remains so to this day."

HARD HYDRAULIC CEMENT.—The following receipt is given for a cement which it is said has been used with great success in covering terraces, lining basins, soldering stones, etc., and everywhere resists the filtration of water. It is so hard that it scratches iron. It is formed of ninety-three parts of well-burned brick, and seven parts litharge, made plastic with linseed oil. The brick and litharge are pulverized; the latter must always be reduced to a very fine powder; they are mixed together, and enough of linseed oil added. It is then applied in the manner of plaster, the body that is to be covered being previously wet with a sponge. This precaution is indispensable, otherwise the oil would filter through the

body and prevent the mastic from acquiring the desired hardness. When it is extended over a large surface, it sometimes happen to have flaws in it, which must be filled up with a fresh quantity of the cement. In three or four days it becomes firm. If its advantages have not been overrated it must be a very excellent cement for making the joints of aquariums water tight.—*Drug. Circular.*

A REMARKABLE SURGICAL AND DENTAL OPERATION.—A remarkable triumph of surgery and dentistry combined, has lately occurred in this city. About the middle of October, a patient came into Dr. Carnochan's hands for treatment of protracted sloughing and caries of the upper jaw. The surgeon found it necessary to operate for the exsection of the entire maxillary from its articulation with the condyle of the lower jaw on the right side to within a space of three molars from the similar articulation on the left. The utterance of the patient was necessarily left unintelligible, the mastication and the facial contour entirely destroyed. Dr. Carnochan then handed the case over to Dr. George H. Perine, who at once proceeded to substitution of the parts—a task rendered much more delicate and difficult by the existence of an aperture, produced by the sloughing of the soft parts through the roof of the mouth into the nasal fossa, large enough to admit the finger into contact with the bony processes on which the cartilaginous system is based. By a series of castings, on the convex surface of which was a spur passing into the aperture and rendering the removal of each cast unbroken so difficult that it had to be effected by the ingenious expedient of blowing vigorously in the patient's nostrils while he held his breath and an assistant pulled at the cast below. In seven weeks from the date of the operation, the part were reproduced by a vulcanitemaxilla, with artificial teeth attached. The adjustment was so skillful, as to restore the patient's utterance, mastication, and facial contour to its perfect normal state, and without information of the change, none of the persons who had known him most familiarly, before the disease commenced, had any idea that his mouth was not in its original condition. This is certainly one of the greatest feats of anatomical substitution ever effected in the annals of surgery.—*New York Paper.*

DEATH IN A DENTIST'S OFFICE.—We transfer the subjoined account of a fearful tragedy to our pages. We do it with no wish to cast odium upon the operator. One such mishap does more discredit to the profession than a score of years can efface. At this time such an event is particularly galling to every high-minded dentist. When men are advertising "Association" in all our large cities, where *Conservative Dentistry* must be utterly disregarded—where *destruction* and not *preservation* must be the maxim of the operators—we cannot fail, as faithful journalists, to call attention to such unhappy affairs. We give the *gist* of the evidence.

Coroner Daniels held an investigation yesterday in the case of Edmund Korosin, who died from the effects of swallowing a cork while having a tooth extracted, when under the influence of laughing gas. The evidence elicited was as follows:

Joseph Korosin sworn.—The deceased was my brother; word came to my house that my brother was dying; in about five minutes I again received word of his death; I went to the house, and asked Mr. Lee what was the

matter; he replied that "he had died from natural causes," and he also said that my brother had swallowed a tooth; Edmund was in good health in the morning.

Dr. J. Klapp sworn.—I attended the young man before he died; when I was called in I found him in a dying condition; he was strangling; the doctor was making efforts to remove the tooth from his throat, which he said had dropped in it; I placed my finger in the deceased's mouth, when he closed his jaws on it immediately; I went to the office to get my instruments; when I returned, the tooth was out; other doctors were sent for, as I had to leave; I returned in about three-quarters of an hour, when I found him dead; he looked to me like one whose vitality would be easily shocked; one of the young ladies in the house told me that the young man had told her that he had the consumption, and had been taking cod-liver oil; it occurred to me that the immediate cause of his death was from the swallowing of the tooth; there was great difficulty in breathing; the face was of a bluish color, and looked as if he was frightened.

Dr. Maury sworn.—I attended the deceased before he died; a young man came to my office and requested me to go and see a young man who had swallowed a tooth and was choking; when I arrived the man was very blue, and was dying; I took some snow, and asked for a galvanic battery, and asked what was the cause; Dr. Lee stepped up and said, "Here is a tooth that the man had ejected," from where I could not tell; the man was pulseless; the battery broke, and we were inconvenienced; the man was dead; I said I could do no more, and left; I asked Dr. Lee if there was any foreign body in the windpipe, so as to know whether to cut it or not; I placed the cork between the teeth of the deceased.

Dr. Stiles sworn.—I extract teeth and administer gas; we have a long bag with a tube attached; the gas is inhaled through the tube; the gas from the lungs passes off through another tube; we rarely put a cork in the mouth without a string attached to it; have used the gas in hundreds of cases without any bad effects.

Mr. Ralph Lee sworn.—The deceased came to me on Monday, and said he wanted me to use the gas; I administered the gas to him, and as he did not breathe as I thought properly, I threw the bag away; the tooth was a very simple one to extract; when the tooth was being extracted, he moved his head, the tooth slipped out of the instrument, and went down his throat; I made all endeavors to get it out, but without avail; I put a cork in his mouth; I have the tooth which he spit out, and the cork in my possession.

Dr. Shapleigh, Coroner's surgeon, sworn.—I made a post-mortem examination of the deceased on Wednesday; he was rather thin, a medium-sized man; I examined his lungs; they were in a healthy condition; the right lung was slightly congested, the left hardly at all; I removed the windpipe and discovered within this cork (cork shown), which is about one inch long; the cork had entered the small end first; the deceased in my opinion, came to his death from this cause; also the symptoms described by Dr. Klapp and others, were caused by this cork being in the windpipe.

Dr. Joseph Coad substantiated Dr. Shapleigh's testimony.

The jury returned the following verdict: That the said Edmund Korosin came to his death by suffocation, caused by a cork, which had been placed

between his teeth by the dentist, Dr. Ralph Lee, No. 226 West Washington Square, to prevent contraction of the jaws during the operation of extracting a tooth, lodging in the windpipe, January 24, 1867.

VIRGINIA DENTISTRY.—We are obliged to the gentleman who sent us this slip. The almost dissevered arteries of thought and commerce are being united. Shall we have representatives from the "Old Dominion" in our next NATIONAL CONVENTION?

"An adjourned meeting of the Virginia Dental Society was held on Tuesday evening, 15th ultimo, at the office of Dr. John G. Wayt. The meeting was organized by the appointment of Dr. Wayt, Chairman, and Dr. W. Leigh Burton, Secretary.

"The committee appointed at a previous meeting to draft a constitution and by-laws, consisting of Drs. Hudson, Chase and Burton, made their report. The report was adopted.

"The election of permanent officers of the Society being next in order, the following gentlemen were chosen: Dr. John G. Wayt, President; Dr. R. N. Hudson, Vice-President; Dr. W. Leigh Burton, Secretary, and Dr. J. Edward Chase, Treasurer. Following the election of officers, Drs. W. B. Pleasants, George B. Steel and John Mahony were selected as members of the Executive Committee. The Society then adjourned to meet on the 29th ult. at the office of Dr. George B. Steel.

"In adopting the name of the 'Virginia Dental Society,' this Association desire that dentists in good standing throughout the State may become members of it, and, having this object in view, as soon as the constitution and by-laws shall have been printed, copies will be sent them and their names solicited for membership. The object of the Society being to elevate, advance and protect the interests of the profession, to afford opportunities for an interchange of opinion on professional matters and for social intercourse, it would appear to be to the interest of dentists in distant parts of the State to become members of it."

WHAT OF THE NEW ANÆSTHETIC?—The Odontographic Society of Pennsylvania has been examining Dr. Richardson's instrument for producing local anæsthesia. A verbal report recommending its use in cases of extracting teeth, removing pulp, amputation of fingers, &c., was made.

A spray producer of American make was produced by Dr. Stellwagen. In this jets for the air and liquid separate. It made a more perfect spray than the English article, and with less ether. An exhibition of the qualities of the two was given, and we thought the American was the best in design. Dr. Breen said he had used the spray producer with favorable results.

Dr. Moffitt said he had used with success for front teeth. Had but little confidence in its use for molars. Preferred to use ether.

Dr. O. C. White said a young lady had been suffering severely with toothache. Found the pain came from the left central incisor, which was decayed on the medio-palatine surface, accompanied with periostitis. Covered the part carefully with cotton, and directed spray upon the gum, not to complete blanching, but as far as was consistent with restored circulation. Introduced a broach into the cavity, removed the pulp, when some bleeding followed the removal of the broach. Applied the broach

again and removed the remaining pulp. Next separated the teeth by wedges, obliterated the nerve space with orange-wood dipped at the point in creasote. Saw the lady again in a week, found the tooth in good condition, filled the cavity with No. 3 adhesive gold, and discharged the patient.

DENTAL COLLEGE COMMENCEMENTS.

We point with great pleasure to the proceedings of our Dental Schools as indices of the healthful growth of our science. It will be seen that the list embraces names from almost all parts of the Union. A better day is dawning. Next year we believe there will be a third more students at our Schools.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.—The annual commencement was held at the Musical Fund Hall. The valedictory was made by T. L. Buckingham, D.D.S., Professor of Chemistry and Metallurgy, after which the degrees were conferred on the following named persons:—Stephen Armos, Cuba; John Aspinwall, Jr., Massachusetts; Edward M. Beesley, New Jersey; Charles Bulkley, Pennsylvania; John N. Crouse, Illinois; Charles H. Darby, Missouri; Frank Darby, New York; Squire C. Dayan, New York; James W. Gurley, Oregon; Robert Huey, Pennsylvania; James Lewis, Vermont; David R. Martin, Pennsylvania; Mariano Martorell, Porto Rico; John Q. McDavid, South Carolina; Henry W. Moore, Pennsylvania; Gonzalo Orne, Cuba; Cassimiro Portillio, Cuba; George L. Rauch, Pennsylvania; John S. Smith, Pennsylvania; James A. Seldon, New York; Clinton W. Strang, New York; James Taylor, England; George R. Thomas, Pennsylvania; Francisco Vego, Porto Rico; H. Meredith White, M.D., Pennsylvania; Joseph F. Winslow, New York.

PHILADELPHIA DENTAL COLLEGE.—The annual commencement was held at the Musical Fund Hall. The valedictory was delivered by Professor Wardell, after which the degrees were conferred on the following gentlemen:—Julian J. Anderson, Massachusetts; Stephen T. Beale, Jr., Pennsylvania; James E. Blanchard, Louisiana; Frederick K. Crosby, Connecticut; Charles M. Curtis, Pennsylvania; Roger Cutlar, North Carolina; Charles V. Du Bouchet, Pennsylvania; George P. Franklin, Pennsylvania; Henry L. Gilmour, Ireland; Edward Goertz, Germany; Daniel G. Harkins, Massachusetts; William C. Head, Pennsylvania; Arthur Holbrock, Wisconsin; William H. Howard, Pennsylvania; Frank A. Hunter, New York; John G. James, North Carolina; M. Lukens Long, Pennsylvania; Andrew F. McAvenney, New Brunswick; Louis P. Meredith, Ohio; Edward D. Moore, Ohio; George B. Morris, West Virginia; George S. Nyce, Pennsylvania; John J. Pitts, New York; John Powers, Maine; Henry A. Robinson, Maine; David D. Smith, Massachusetts; Leopold M. Townsley, Missouri; Carl R. Walther, Germany; Marshall H. Webb, Pennsylvania; Otis C. White, Massachusetts.

"REGULATING THE PRACTICE OF DENTISTRY.—A bill to regulate the practice of dentistry has been introduced into the House of Representatives of the State of Indiana, and we are informed that a bill of like char-

acter will at an early day be introduced in the Senate. We trust this measure will receive the favorable consideration of the members of both Houses. Every intelligent person knows that thousands are made sufferers for years, or permanently disfigured, through the malpractice of unprincipled charlatans who, through their plausible representations, often win the confidence of too credulous people. The fact is, people are unable to judge of the qualifications of the dentist, and hence are liable to be imposed on by that class who, having spent a few weeks, or, at most, months, in some obscure office, palm themselves off, by this hot-bed process, upon the public as dentists. They are most frequently found to be like forced products in general, very green, always expensive, and often ruinously unhealthy.

"We should be opposed to the passage of any law that would in any way be oppressive upon any portion of the community, but the objects of this bill are so manifestly just that it must commend itself to every person who takes the trouble to look into it. There is no dentist in the State at all fit to discharge his professional obligations to his patients, but will rejoice in its passage. Indeed, the mere fact of any dentist opposing it would be sufficient cause for doubting his ability. But to the people, who are more particularly interested, can there be any doubt but that it would be an acceptable law? We think not. On the contrary, we fully believe that physicians, scarcely without an exception, and nearly every well-informed person in the State, would recommend its passage.

"The bill now before the Legislature provides that it shall be unlawful for any one to practice dentistry, except those who are graduates of some regularly incorporated dental college, those who have been ten years in reputable practice, or those holding certificates of qualification from a board of examiners appointed by the Governor. Thus it will be seen that no possible injury can result to any person fit to practice his calling, while the capable will be sustained and strengthened, and the public protected. And here the thought occurs: 'Can there be any excuse for incompetents in this profession at this day?'"

"*EPULIS.*—*Reported by Dr. Napheys. Surgical Clinic of Prof. Gross, Jefferson Medical College.*—Sarah —, æt 25. She has a tumor of the upper jaw, denominated epulis. It is of fibroid character, with more or less epithelial matter in its interior, and springs from the socket of one or more of the teeth. It does not grow merely from the gum, as the term epulis would signify.

"The tumor could readily be shaved off, but this would not insure immunity against its recurrence. It is necessary to remove a portion of the jaw-bone itself, otherwise the operation would be worse than useless.

"Two teeth were extracted, and by means of the bone forceps, described by Scultetus, a portion of the jaw-bone was removed with the tumor.

"The mouth was ordered to be washed daily with a solution of permanganate of potassa, to allay fetor, and keep the part in a comfortable condition. There is no probability that the saliva will be swallowed to an injurious extent, though it sometimes happens after operations involving a large portion of the jaw, that life is destroyed by the deglutition of the secretions of the mouth or nose."—*Med. & Surg. Reporter.*

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DENTISTS AND DENTAL JOURNALS.

A CAREFUL review of the dental serials of the day, aided by long observation, impresses upon our minds the conviction that a large amount of money and labor is misapplied in conducting the journals devoted to our profession. We allude to this subject with shame. While we have five dental schools and forty dental associations, where honest, earnest men labor for the advancement of the profession, and for our common prosperity, it is painful to reflect that they have not the proper medium for their thoughts. This evil is, in a great degree, to be attributed to the very confused ideas which publishers have of the fitness of those to whom they entrust the editorial pen. The publisher selects an editor. The editor runs up and down the land; lectures (whenever any one will listen), doses the public with dreary diatribes on "basil principles," or wearies the readers with drowsy platitudes on matters which neither himself or the public understand. The publisher has mistaken smartness for *fitness*, and the anxious dentist suffers because he has not been supplied with information which he needs. Everybody knows that a vast majority of the words in a medical dictionary are rarely used. These barbarous words the un pitying editor pours upon the afflicted dentist, without reason and without sense. Oh, how often in attempting to find the meaning of these "jawbreakers," do we sigh for the English of the Bible and of Dr. C. A. Harris? Men do not walk upon stilts in this latitude, and the editor who assumes the duties of the schoolmaster; who chastises and everlastingly lectures; and forces himself upon the public, in season and out of season, has mistaken his vocation. He may disgust, he may weary the public, but he never will instruct nor interest them.

The duties of an editor, if we do not mistake them, are, to cultivate a kindly spirit in the profession, and to watch with sleepless eyes for their good. His journal is but the vein which conveys the stream of intelligence to the masses. He may give direction to the current of thought;

he is not required to *make* it. Give us fewer technicalities and more of the solid Anglo-Saxon tongue wherever it can be judiciously used in editorials and communications. W.

FUNGIOUS GROWTHS.

A FUNGUS or unnatural growth or expansion of the pulp of a tooth is a pathological condition which we have reason to believe is but little regarded and treated by dental surgeons. Caused by exposure and local irritation, and occurring as it often does in valuable teeth, it demands as much attention on our part as ordinary pulp exposure; especially when with a little care it yields as easily to proper remedies—and yet the only treatment recommended in the standard work and text-book on Dental Science, recently revised by the aid of some of our eminent dentists, is extraction.

Dr. Harris divides these excrescences into two sorts: those originating from the dental pulp, and those proceeding from the dental periosteum, or from the gum; and says that a cure is only effected by the removal of the teeth—since when extirpated, they appear again in a few days, or in a very short time afterwards. It is very apparent, from the tenor of the short chapter devoted to this subject, that the author has had but very little to do with the removal of them; and regarding, as he did, teeth with devitalized pulps generally as local irritants, we cannot wonder at the conclusion in regard to them. Another writer notices their growth over or within the cavity of the *dens sapientiæ*, and recommends that they be strangulated with a ligature, deeming excision or extraction a dangerous operation in such cases, on account of the hemorrhage likely to ensue. After their removal, he recommends that the parts be touched with nitrate of silver.

The chief cause of this trouble is the exposure of the pulp; and a fungous growth, originating in this way, is very easily distinguished by a practiced eye from a growth of the gum filling a cavity. In the latter case, the gum can easily be forced out by means of cotton wedges, and cut away with a scythe-shaped lancet. Very frequently the nerve is not even exposed. A styptic applied to the gum for a day or two by means of cotton, will enable the operator to fill the cavity without further trouble, unless the nerve should be exposed, when the usual treatment will be necessary. We have never yet met with one originating in the dental periosteum, and will therefore pass over the consideration of that kind from want of experience; but as we have successfully treated, in every instance attempted, the enlarged pulp kind, we will dwell more par-

ticularly on it, giving the mode of treatment resorted to. The real fungous growths are more frequently found in teeth very much decayed, and are usually of an oval form, and about a quarter of an inch, largest diameter. They are generally found in the teeth of children from eight to eighteen years of age. They bleed profusely at the slightest touch, are painful when disturbed, being of a blood color, and resembling a miniature bladder filled with blood. When destroyed, the blood dries up, and leaves them about one quarter the size; they are then very easily extirpated. As they are often found in the first permanent molars of children about eight or nine years of age, demanding to be retained, at least for a few years, until others are erupted which will serve the purpose of mastication, a gentle and careful treatment, requiring both time and patience, is necessary. It is difficult to insert and retain the first application, since the fungous growth presses closely against the walls of the cavity; but with care, and by moistening a pledget of cotton in creasote, it can be pressed between the two, and will remain in position for at least a day. This will force the excrescence sufficiently away to allow of a larger wedge. This is to be continued until a sufficient cavity is formed to allow of a sealed application, which will consist of the common nerve paste or of creasote and arsenic, and retained by means of os artificial. Two or three of such applications may be necessary before it will be sufficiently destroyed to admit of extirpation, although even after the first application it may present a dark appearance. It can be cut away, by means of a thin lancet. It will then require another application to the part remaining in the pulp cavity, which will generally be found to be alive, and sometimes profusely bleeds. When this is devitalized and all sensitiveness removed, for which we allow six or seven days, the roots and pulp cavity may be filled in the usual way. But several successive applications may be required before it succumbs. With this exception, together with the care required in sealing them, it is as easy to save these teeth as it is those with the ordinary exposed pulps. If it is desirable to extract them, we would never advise it done until the fungous growth is destroyed and extirpated, since a profuse and troublesome hemorrhage might ensue.

A. T.

TREATMENT OF ABSCESS.

BY W. H. BREEN, D.D.S.

ON the 6th of April, a patient called on me, who had been suffering with alveolar abscess for ten months. He had been under the care of two dentists, and had had three teeth removed without any beneficial effect. He was then recommended to a physician, under whose care he remained seven months; but as he failed to cure the disease in that time, he told the patient

it was useless to take his money any longer, since he believed he was doing him no good, it being out of his sphere; he told him if the abscess was opened and the bone scraped, it might get well. He was then sent to me, feeling somewhat discouraged. I made a diagnosis of the case, and knowing that his fears were aroused, I assured him that these kind of abscesses were frequently met with and were successfully treated by skillful dentists, and that I thought I could cure it without recourse to a severe operation. I told him what I should do, whereupon he became very nervous, and said he must take something. I placed him under the influence of chloroform and proceeded with the operation. The abscess was in the superior maxillary, a little to the right of the medial line, involving one-fourth of the roof of the mouth, the mucous membrane being distended about half an inch below the surface; the first bicuspid and lateral had been removed. There was a fistulous opening through the alveolus of the lateral. I removed the right central incisor, then with a long curved lancet introduced up the socket, I cut through the process. I then made an incision in the posterior portion of the abscess large enough to insert a syringe (by this time the patient had recovered). I then placed him in a position inclining forward, and with tepid water syringed and washed the pus out of the anterior cavity, and then injected phenol, placing a small pledget of cotton in each cavity, with one end hanging out. I dressed it twice the first day, and subsequently once a day. I used for dressing phenol diluted, making a very marked progress each day; and in three weeks he was discharged, the abscess being perfectly cured. It is evident from the chronic condition of this abscess, that there would soon have been necrosis and exfoliation of the alveolar process and of the superior maxillary plate. I am now replacing the lost teeth with artificial substitutes.

CLINIC CASES

UNDER THE CARE OF JAMES E. GARRETSON, M.D., D.D.S.,

Lecturer on Clinical Surgery at the Philadelphia Dental College.

(Reported expressly for the Dental Quarterly.)

GENTLEMEN: This patient is suffering with an annoying discharge of pus from his nose. And here I will say that in the examination of the canals and cavities of the subject, we must have light and room. I place this patient with his face to the window. He tells us that he has been affected more than a year with this disease. We first examine the nares, as the inference is that the discharge comes from local irritation. You see I introduce the delicate white handle of this scalpel into the canal, and press one of the lateral boundaries aside. Now, with the aid of the sunlight, I can see very well into the nose. Practice this a little and you will find it answers very well in ordinary cases. I see that within the nares are small elevations (not unlike small teats), one in each nostril; these are pathological appearances, and we will find them connected with the discharge. I see also, that each teat has a small opening into it, and I will pass a probe into one of these openings, and we will see what we will find. I will direct the probe towards the mouth, as I suspect this to

be a case of alveolar abscess. Now I will raise the lip up and see. The two central incisors are very dark; I suppose they contain devitalized pulp, and our doubts are dispelled as to the cause of the trouble. It is a case of double dental abscess. The history of the case I can read at a glance—the patient had a severe toothache before this discharge began. First, there was inflammation of the pulps. Secondly, periodontitis, the teeth became sore and felt elongated. In five or six days the pus running from his nostrils gave him relief, as the matter had found vent, and the pressure ceased. These alveolar abscesses are usually simple affairs. The periodontium becomes inflamed, and suppuration follows; the pus accumulates about the roots of the tooth, and causes an absorption of the surrounding bone; the pus seeks an outlet in the easiest way, and this is usually found in the vestibular face of the process, opposite the affected part. This kind of abscess is called *parulis*, or *gum-boil*. Cases occur, as in the case before us, where the pus does not take this natural course. Both abscesses, as you see, have opened into the *nose*. You will always observe that the pus is discharged in the way that offers the least resistance.

In the specimens before you on the table you see a number of maxilla, and you see the roots are so long that they penetrate the antral floor. Under the circumstances we must expect that the discharge will be into the sinus. In the case before us, the septum of the bone, between the roots of the teeth and the nares is, I am certain, less than the lateral alveolar boundaries, so it is quite natural the discharge should take place here. I have known an abscess from a periodontally diseased tooth discharged into the orbit. In the case to which I allude (the only case I have seen), the tooth was encysted, and lay between the antrum and the nasal process. Often alveolar abscesses discharge upon the cheek. In these cases the treatment is of a domestic nature. I have treated them upon the neck, upon the temporal region, at the apex of the chin, and upon the inter-maxillary suture, and in other places. Now that we may cure the patient of this discharge, of course we must cure the teeth, and the extraction of the teeth would seem to be indicated. I will suggest that we try another method. We will send him to the dental department, and holes will be drilled into the pulp cavities, through the palatine faces of the teeth, and the pus will discharge itself through these outlets; the sinuses leading into the nares will heal, and thus he will be cured of his nasal trouble. As his teeth are great aid to his good looks, it is probable that if we syringe the abscesses through the canals of his teeth with diluted tincture of iodine the teeth may be saved.

SECOND CASE.—This is a case of amputation of uvula. We know that the uvula is composed of two small muscles, enclosed in a loose bag of mucous membrane. It is the pendulous body behind the soft palate. The muscles are attached to every part of the bag by the interposition of the cellular tissue. Amputation of this organ is usually rendered necessary by the œdematous enlargement or elongation. When elongated and resting upon the tongue, it causes by its presence an irritating and hacking cough, which often produces serious diseases of the lungs. Elongation of the uvula is produced by one of three causes.

First.—General hypertrophy of the full substances of the organ.

Second.—Atony of the muscles.

Third.—Relaxation of the enveloping mucus bag.

In the last two cases it may be relieved by astringents, but amputation is by far the easiest cure. Sometimes the uvula will swell out like an ambitious frog. It will fall into the chink of the glottis, and if speedy relief is not afforded it will kill the patient. In these cases the enlargement depends upon the exudation of serum into the cellular tissue. Application of the tincture of iodine is recommended by the doctors in these cases, but if I were the patient, I should want to depend upon something more reliable. Amputation is certain relief, and amputation must be performed.

This patient has an elongated uvula, and I will amputate it—that is, I will cut off just so much as it is too long. This operation is very simple, I have performed it upon my own uvula, before a looking-glass. Here, as you see is a tongue depressor, a pair of curved scissors, and a pair of Liston's forceps. Now, you see I force down the tongue, and hold it with the depressor. These forceps close with a spring and are tooth pointed. I catch the top of the uvula, thus, and I am perfectly master of the organ. Now, you see I pull it gently forward and it lies in the centre of the oral cavity. My assistant now takes the tongue depressor, and I take the scissors in my relieved hand, and clip off the organ. Here, in the points of the forceps is the piece. The patient will now gargle his throat with a decoction of white oak bark, and for a month or so will take three or four spoonfuls of the ferrated elixir of circoma.

THIRD CASE.—This is a case of epulo-erectile tumor of the upper maxilla. Miss —, æt. 13. This term, *epulis*, is a bad one, and very confusing. It has only an anatomical signification, and means upon the gum—*epi*, upon; *oylon*, the gum. In reading of the mouth every one sees that there is great confusion of names and ideas. In this clinic, we call all tumors upon the gum *epulic*, but each has its special classification, as implied in its pathology. Thus, here is a spongy vascular tumor in the mouth of this patient, in pathological character it is erectile,—that is, it is composed of a congeries of vessels, intermixed and held together by cellular tissue: so we say it is an erectile tissue; but being upon the gum it is *epulic*. Now, when I call this simply *epulis*, I do not describe its real character. According to the nomenclature we have adopted, I will call this an epulo-erectile tumor; if it were fibroid, I would call it epulo-fibroid; if it were cartilaginous, I would call it epulo-cartilaginous, etc., etc. Thus, we remove all confusion of ideas. You see that *epi-oylon* is used as an adjective, not a noun. This tumor before us is of two years standing. The patient tells us that it has been treated by ligature, caustics, &c. without effect. I have seen so many cases of this kind, that I know the underlying bone to be affected. Now I will pass this sharp pointed probe into the mass, and see what we will find. Look, as I supposed, the bone is like honeycomb. Now we see why caustics and ligatures of the soft parts were of no use. Such applications only aggravate the symptoms. The growth is about the size of a hickory nut; when I press my fingers upon it, it plainly grows less under the pressure. The patient tells us that it increases or diminishes in size, with the quiet or excitement

of the circulation. It does so because it is a *vascular* substance. Is this tumor cancerous in its nature? Well, whether it is or not, it will increase in size if we do not remove it; it will kill the patient, and if we do remove it *entirely*, it will not come back.

To cure this patient, I will perfectly circumscribe the diseased part. I next cut with a scalpel through the healthy soft parts, clear down to the bone, and a sufficient part of that which is unaffected. For this purpose I have two pairs of bone forceps; one pair cuts like the ordinary scissors—with these I now follow the vertical cuts on either side of the tumor which I have just made with the knife, making the blades meet through the bone. The second pair cuts horizontally, as you see, and with these I connect above the tumor the cuts vertically made. Here is the tumor. You see how quickly and how easily the thing is done, when we understand *how* to do it. Now, you ask, what must we do with the wound? Nothing at present. In a few days, if all goes right, we will see it covered with fine florid granulations. If, on the contrary, action too high or too low sets in, we must treat it as indicated by circumstances. It is generally found that a tonic treatment is demanded.

FOURTH CASE.—*Visible effects of an Operation on the Upper Jaw.*—This lady, who has been one of my private patients, now kindly presents herself, that we may instruct ourselves with reference to the effects of an operation. As we look upon her face hardly an evidence of the operation is visible. I now remove from her mouth the artificial denture, and in looking into her mouth you observe that about one-half of her upper jaw, on the right hand side, has been removed—an operation that I performed some months ago. The section extends from the alveolus of the right incisor tooth back to the tuberosity, and as high as the infra-orbital foramen. In a month the case was well enough for the denture she now wears. This denture, as you see, differs from the ordinary set of teeth only in having the plate made to occupy the vacuum made by the removal of the diseased part. The child whom I operated upon can have the deformity remedied, as has been done in this case. And here, gentlemen, I must give to some of you due praise for the skill and ingenuity you have displayed in making artificial dentures to fill the gaps made by operations. The “compensatory part” of a dentist’s labors demand a full share of your attention. Your skill in this part of your labors has been of great aid to us in these clinic cases.

ON THE PREPARATION AND USE OF HARD RUBBER.

BY JOHN C. EMBURY, M.D., D.D.S., NEW YORK.

In the use of hard rubber, if the student and general practitioner would avoid discouraging results, it is of the utmost importance that he begin with a clearly laid out plan; that he should previously consider well the effects of each act, and that he should make himself familiar with the chemical and mechanical laws which affect the compound. And here we must caution the experimenter against undue haste. “Make haste slowly” is an excellent motto, as applicable to hard rubber as other things. It is

easy to render the best caoutchouc brittle and spongy by careless and hasty manipulation. A page of our experience would make the reader stare.

We will give a brief outline of our "ground plan" for preparing hard rubber. We began using it in 1859, and the reader will see that our experience is ample, and we may add, sometimes rather costly. After experiments covering five or six years of time, I have arrived at the conclusion the best rubber for dentist's use are the English deep red, and that prepared by the Hard Rubber Company and sold by their agents. In speaking of the Hard Rubber Company's rubber, I mean to say the red rubber sold by them. I find these rubbers to contain less of earthy matter and of the metallic oxides than any others I could buy. Next to the red rubber, my experience has taught me to prefer the brown. Some of Ash & Son's (English) rubber which I experimented with, I found to be nearly one-half other material, which looked very much like the oxide of some metal. The dentist who intends using rubber in lieu of gold, silver or platinum, etc., should first take the impression of the mouth exactly as if he were preparing for plate work. He must be careful that his impression is a perfect one, free from blemishes of all kinds. He next makes his model, and then proceeds to make his model base-plate upon which the teeth are to be fastened, then he builds up of the form which he intends the vulcanite set to be. He next places this model set upon the model and encloses it in plaster in the flask, and thus forms a mould of the model set. When he attempts to separate he finds the teeth adhere to the plaster in a section of the flask. Next, he removes the model plate and makes grooves in the plaster that the excess of the rubber will run off from the mould. Next, he prepares the mould, so that the rubber will not adhere, packs with unvulcanized rubber under considerable pressure, and is ready to vulcanize.

Vulcanizers are of several kinds. It is not our design in this paper to express our preference for any particular kind. Hayes', Whitney's and Taylor's are generally used. After vulcanizing it is only necessary to polish and trim the set. Having thus glanced hastily at the outlines of the process, we may proceed to some of the details. And here we must repeat our former caution—"The more the haste, the less the speed." Procure (if you can) newly ground plaster, or plaster which has not been exposed to the air. In using it, make it as thick as can be used, and see that it contains no air bubbles. I have found that when I saturate the plaster impression with water I can get a more even and smooth surface. When it is not possible to cast the model as soon as the impression is taken I steep the model in water, as I find this restores the water which is lost by evaporation. I cover my impressions with a thin coating of oil. Some dentists waste hours of precious time in oiling and varnishing their carefully dried impressions. We have done this and found it of no use. When we have used a solution of soap upon plaster which had been previously varnished, we found that it spoiled our work; when applied to the plaster *directly*, it acts well. In cases where there are wax impressions, and there are one or more teeth, it works well to fill the cavities made by the teeth with water, then pour in a little thickly mixed plaster, tap the impression gently, you will find the plaster sinking and the water rising. Now put in enough plaster to make the model of the thickness you want,

and gently tapping the impression will make the plaster solid and firm. When we wish to part the model from the wax impression we place the whole mass in warm water. By *warm* water, we mean water heated to just such a degree that the wax will become soft enough to be removed without risk of fracture to the teeth. This is better than heating the mass. It also keeps the plaster saturated so that the wax will not enter the pores of the plaster, and it also makes a *cleaner* surface, which is an important item in using hard rubber. We also save the labor of oiling the wax impression before we cast our plaster. We never varnish the surface of our models. In trimming, we must not forget to trim them down much thinner than for plate work. In selecting the material for the base of the model set, I have experimented with almost all the substances used. Some years ago I bought several sheets of the ordinary gutta percha; I supposed I had found the desired substance, but upon attempting to use it found it too soft and yielding, and it was further objectionable, because it adhered to my hands in using it. I then used pewter rolled out into thin sheets, but this did not do. I also have used sheet wax, block-tin, etc., but find them all useless. The only substance I can use with any success is prepared gutta percha. This material I place in water heated just so hot that I cannot hold my naked hand in it. I previously saturate my models in cold water, which keeps the gutta percha from adhering. I then dip my hands in cold water and force the softened gutta percha down into the face of the model.

I have attempted in the above brief statement to give approved views upon the important subject of hard rubber. I have tried to divest my statement of all technicalities and verbiage. In the next *Quarterly* I will give more minute details.

LAMM'S GOLD FOIL.

Philada., April 24, 1867.

Editors Dental Quarterly:

GENTLEMEN:—Allow me to avail myself of your columns in making some remarks upon the use of Lamm's Gold. Sometime ago I went to the depot of a manufacturer in this city, and as I had heard every one cry out about the value of Lamm's Gold, I was induced to buy a few boxes of it. The vender assured me it was a "very superior article." He suggested that it would fill under saliva, &c., and would benefit myself and the patient. Well, I went back from the dental depot—the six boxes of Lamm's Gold rattling in my pocket—as pleased as the prospect of making my fortune and the six boxes of Lamm's Gold could make me. On the way home I often put my hands on my pockets to assure myself that my precious purchase was safe. Once safe in my office, I locked my door, and sat down to view my treasure. I opened the six boxes and spread them before me on the stand. Yes, they were all safe—the precious little golden eggs, each so nicely packed in cotton! Mother Goose was not half as happy as I. But alas! for all human hopes! I made a crown filling with it, and in six weeks I had the mortification to see it crumble to atoms, and I gained the contempt and lost the patronage of one of the most

influential families in the city. Yet I was not satisfied; I had a grain of faith left. I made five more trials with "the superior article," and these trials have convinced me that I may state the results. It is permeable by the secretions of the glands, and turns black. It is not pure gold, as I can detect traces of iron in it. It is an unmixed humbug.

Yours, &c.,

H. C. C.

P. S. I am happy that the eminent gentlemen at the American Dental Convention agree with me in my view of Lamm's Gold. I append the report:—

The report of the Committee on Lamm's Gold being called for, in the absence of the chairman (Dr. Arrington), Dr. Atkinson made a verbal report, embodying his own views on the preparation, the substance of which was that the ordinary adhesive foil is ahead of any crystal gold or other preparation he had ever known. Fillings of Lamm's Gold, put in wet some months since, had crumbled; and the material wasted much in using. He did not believe in filling teeth under saliva, and wanted nothing that would encourage such operations. As a substitute for adhesive foil he would not take this gold as a gift.

Dr. Rich said that with the microscope he could find iron in this preparation; and it was further objectionable because it must be packed with blunt points.

Dr. Fitch had seen a plug of this material inserted wet. Its introduction took more time than would be required for foil, and the surface was inferior. He could have no reliance on such operations.

Summary of Interesting Dental Intelligence.

BY GEORGE R. WELDING.

THE ASSOCIATION OF THE COLLEGES OF DENTISTRY.—The proceedings of this body—our Dental Congress—as we may call it, has more than common interest at this time. Its actions with reference to dental schools will arrest the attention of every dentist. We make room for the proceedings, in full. The action of one of our oldest and most respectable schools, will elicit condemnation or approval as the views of men incline. We are not partisans, and our pages are open for the temperate discussion of this grave and important matter.

The Association of the Colleges of Dentistry met in the lecture-room of the Philadelphia Dental College, in Philadelphia, on Wednesday, March 20, 1867, at 10 o'clock, A.M.

Professor E. Parmly, President, in the chair.

There were present from the Baltimore Dental College, Professors P. H. Austin, F. J. S. Gorgas; Ohio Dental College, Prof. J. Taft; Pennsylvania College of Dental Surgery, Profs. T. L. Buckingham, George T. Barker, E. Wildman, W. S. Forbes, J. Truman; Philadelphia Dental College, Profs.

J. H. McQuillen, J. F. Flagg, Thomas Wardle, C. A. Kingsbury, J. E. Garretson, Lecturer on Clinical Surgery; New York Dental College, Profs. E. Parmly, F. D. Weisse, N. W. Kingsley, R. King Browne.

The minutes of the last meeting were read and approved.

The name of Prof. H. Judd, of the Missouri College of Dentistry, was presented for membership in this Association.

The following committee was appointed to receive and report upon the application.

Profs. George T. Barker, N. W. Kingsley, J. H. McQuillen, who, after due deliberation, made the following report:

We have examined the credentials of Prof. H. Judd as a delegate to this Association, and would respectfully report that owing to the peculiar position in which the institution now stands that he represents, we do not feel at liberty to recommend him as a member of this body, but would suggest that for the present he be invited to be present at the sessions of this meeting, and take part in the deliberations.

On motion of Prof. Weisse,

Resolved, That the resolutions presented, considered, and approved at the last meeting of this Association, be now taken up and adopted.

After which, resolutions, constituting regulations for all the Colleges represented in this body, were discussed, pending which the Association adjourned to meet in the lecture-room of the Pennsylvania College of Dental Surgery, at 3½ o'clock, P.M.

Afternoon Session. The following regulations and by-laws were adopted:

I. That the rule of our dental colleges, allowing one session in a medical college to be considered equivalent to one course in a dental college, be abolished.

II. That two full years of pupilage with a reputable dental practitioner, inclusive of two complete courses of lectures in a dental college, be required to entitle the candidate to an examination for graduation with the degree of D.D.S.

III. That a graduate of a respectable medical college, who has been under the pupilage of a reputable dentist for one year, and shall have attended one full course of lectures in a dental college, shall be entitled to examination for the degree of D.D.S.

IV. That eight years of dental practice, including regular pupilage, will be regarded as equivalent to one course of lectures.

V. That the regular term of instruction, in the dental colleges, be five months, the sessions in each to commence on the third Monday of October, annually.

VI. That students entering the colleges later than the 10th of November, will not be credited for a full course, nor be eligible to graduation at the same term.

VII. That a candidate for graduation will be required to furnish a written certificate of having fulfilled the required pupilage, or period of practice.

VIII. Regarding the education of the profession as the primary and only object in the establishment of dental colleges, therefore

Resolved, That while this Association does not forbid, it cannot approve the conferring of degrees upon persons who have not complied with the

regulations agreed upon by this body, with the exception of gentlemen who have distinguished themselves as contributors to dental science.

The regulation marked number eight was *very* warmly and earnestly discussed by almost all the members; pending which, a motion was made by Prof. George T. Barker to lay it on the table. The vote upon this motion being taken by colleges was as follows:

Yea, Pennsylvania College of Dental Surgery.

Nay, Baltimore Dental College.

" Ohio " "

" Philadelphia " "

" New York College of Dentistry.

After some further discussion, and amendment of the resolution by Prof. Austin, the vote upon it was taken, and was as follows:

Yea, Baltimore Dental College.

" Ohio " "

" Philadelphia " "

" New York College of Dentistry.

Nay, Pennsylvania College of Dental Surgery.

Immediately after this vote, the faculty of the Pennsylvania College of Dental Surgery announced, through their dean, that the passage of this resolution rendered it necessary for them to withdraw from this Association, alleging for this movement their conviction that it is a rebuke upon their past practice of conferring degrees upon practitioners of dentistry, and also a restriction upon their intended future course in this respect.

Second Day—Morning Session.—Dr. James E. Garretson presented the following:

Resolved, That we recognize that the truest dignity of the dental, as any other specialty, is found alone in the education of its practitioners, and that this education should be one common to all medical men, and that it be the object of this Association of Colleges to so educate their students—advancing to this object as rapidly as circumstances seem to warrant, thus merging the specialty into the common mother practice.

This resolution called forth some earnest discussion, after which, the following was submitted by Prof. R. King Browne, and agreed to:

Honoring the sentiments which animate Dr. Garretson in the presentation of his resolution, and favoring the fullest and most ample instruction on the part of dental colleges, but considering it a matter which should be left to the different faculties, I respectfully move that the resolution be laid upon the table.

On motion of Prof. Weisse:

Resolved, That we reconsider the action of yesterday, in regard to the reception of Prof. H. Judd, of the Missouri Dental College, as a member of this Association.

The vote was unanimous for reconsideration.

On motion of Prof. Weisse:

Resolved, That on the establishment in the Missouri Dental College of such additional chairs as are regarded by this Association as necessary to qualify dental practitioners, viz., those of operative and mechanical dentistry, the said faculty shall become *ipso facto* members of this Association.

On motion of Prof. McQuillen :

Resolved, That the annual sessions of the Colleges begin on the 15th day of October, 1867.

On motion of Prof. Kingsley :

Resolved, That when this Association adjourn, it be to meet in the City of New York, on the 19th day of March, 1868.

It was moved that the expenses of the Association be paid by an assessment on the colleges.

On motion of Prof. Weisse :

Resolved, That the Secretary be requested to have the Constitution, By-Laws and Regulations of this Association stereotyped, for printing sheets for distribution to the different faculties.

Prof. J. Taft was appointed Treasurer of the Association.

A vote of thanks was tendered to the faculties of the dental colleges of Philadelphia, for the courtesy and kindness received at their hands by this Association during its sessions here.

The various faculties, in the person of their various official officers, signed the Constitution and By-Laws, after which the Association adjourned to meet in the City of New York, on the 19th day of March, 1868.

J. TAFT, *Secretary*.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.—The eleventh annual commencement of this College was held at Musical Fund Hall, Philadelphia, March 1, 1867. The degree of "Doctor of Dental Surgery" was conferred by Dr. W. W. Fouche, upon the following gentlemen, who were regular students in attendance upon the lectures, twenty-six in number: Stephen Armos, Cuba; John Aspinwall, Jr., Mass.; Edward M. Beesley, N. J.; Charles Bulkley, Pa.; John N. Crouse, Ill.; Charles H. Darby, Mo.; Frank Darby, N. Y.; Squire C. Dayan, N. Y.; James W. Gurley, Or.; Robert Huey, Pa.; James Lewis, Vt.; David R. Martin, Pa.; Mariano Martorell, Porto Rico; John Q. McDavid, S. C.; Henry W. Moore, Pa.; Gonzalo Orue, Cuba; Casimiro Portillo, Cuba; George L. Rauch, Pa.; John S. Smith, Pa.; James A. Sheldon, N. Y.; Clinton W. Strang, N. Y.; James Taylor, England; George R. Thomas, Pa.; Francisco Vega, Porto Rico; H. Meredith White, M.D., Pa.; Joseph F. Winslow, N. Y.

The same degree was also conferred upon the following gentlemen, who have been in practice since 1852, but who were not required to attend the lectures of the institution: G. C. Brown, N. J.; J. F. Leaming, N. J.; D. R. Greenlee, Pa.; J. H. Githens, Pa.; Spenser Roberts, Pa.; Amos Wirt, Pa.; A. R. Robbins, Pa.; Benjamin Wood, N. Y.; C. A. Marvin, N. Y.; W. C. Parks, N. Y.; G. H. Perine, N. Y.; C. E. Francis, N. Y.; W. B. Hurd, N. Y.; T. Burgh, N. Y.; S. Hassell, N. Y.; A. L. Northrop, N. Y.; Enos G. Ray, N. Y.; T. H. Musgrove, Md.; W. W. Russell, Mass.; J. A. Salmon, Mass.; E. G. Leach, Mass.; D. S. Dickerman, Mass.; Chester Heath, N. H.

The valedictory was delivered by Prof. T. L. Buckingham.

PHILADELPHIA DENTAL COLLEGE.—The fourth annual commencement of this College was held at Musical Fund Hall, Philadelphia, March 1, 1867. The degree of "Doctor of Dental Surgery" was conferred by Rev. Richard Newton, D.D., upon the following gentlemen, thirty in number:

Julian J. Anderson, Mass.; Stephen T. Beale, Jr., Penn.; James E. Blanchard, La.; Frederick K. Crosby, Conn.; Charles M. Curtis, Penn.; Roger Cutlar, N. C.; Charles V. Bouchett, Penn.; George P. Franklin, Penn.; Henry L. Gilmour, Ireland; Edward Goertz, Germany; Daniel G. Harkins, Mass.; William C. Head, Penn.; Arthur Holbrook, Wis.; William H. Howard, Penn.; Frank A. Hunter, N. Y.; John G. James, N. C.; M. Lukens Long, Penn.; Andrew F. McAvenny, N. B.; Lewis P. Meredith, Ohio; Edward D. Moore, Ohio; George B. Morris, W. Va.; George S. Nyce, Penn.; John J. Pitts, N. Y.; John Powers, Maine; Henry A. Robinson, Maine; David D. Smith, Mass.; Leopold M. Townsley, Mo.; Carl R. Walther, Germany; Marshall H. Webb, Penn.; Otis C. White, Mass.

The valedictory was delivered by Prof. Thomas Wardle.

BALTIMORE COLLEGE OF DENTAL SURGERY.—The twenty-seventh annual commencement of the Baltimore College of Dental Surgery was held at the Concordia Building, Baltimore, on Thursday evening, February 28, 1867.

The exercises of the occasion were opened with prayer by the Rev. Dr. G. C. M. Roberts. The names of the Graduates were then announced, and the degree of "Doctor of Dental Surgery" was conferred by the Dean of the Faculty, Prof. F. J. S. Gorgas, upon the following gentlemen: Hugh Wilson Arthur, Md.; Warner Julian Bailey, Miss.; John Robert Barr, Ala.; Thomas Ligget Reckenbaugh, Md.; J. Robson Bromwell, Md.; Walter Bruce, Va.; Andrew Simon Cutler, Ind.; Augustus Boyd Doremus, La.; Joshua Stevenson Dorsey, Md.; John Francis Ruter Dufour, Dist. of C.; Joseph Root England, Md.; John d'Oyley Evans, France; William Farmer, Va.; James Taliaferro Grant, Tenn.; Silom Homer Henkel, Va.; James Hogg, Md.; B. Rush Jennings, Md.; Henry R. Johnson, Va.; Harry Galbraith Leas, Pa.; Algernon Mosely Lee, M.D., N. C.; Alfred Fitzgerald Malone, Fla.; George William Massamore, Md.; Isaac Carrington Morton, Va.; James William Miller, Va.; Charles A. Norwood, Md.; Robert Lyon Seale, M.D., Ala.; Isaiah Simpson, S. C.; Ezekiel Cooper Stockton, M.D., Pa.; George N. Swoamstedt, Ind.; Marion Elisha Tarvin, Ala.; John Charles Uhler, Md.

The valedictory address was delivered by Prof. Russell Murdoch. The benediction was pronounced by the Rev. Dr. Roberts. The large hall was filled with the friends of the graduates, and the music of the band tended to enliven the scene.

The following change in the faculty was announced: Dr. H. H. Keech, having resigned the Demonstratorship of Operative Dentistry, Dr. Hugh McGinnis Grant, of Abingdon, Virginia, has been appointed Demonstrator of Operative Dentistry.

NEW YORK COLLEGE OF DENTISTRY.—The first annual commencement of this College was held at Steinway Hall, New York, March 6, 1867. The degree of "Doctor of Dental Surgery" was conferred by Prof. Eleazar Parmlly upon the following gentlemen, nine in number; C. D. Allen, W. C. Horne, J. W. Lyon, N. Y.; J. F. P. Hodgson, Ithaca, N. Y.; R. W. Browne, Conn.; G. Bernard, Wash. Ter.; W. D. Tucker, Tenn.; W. Dutch, California; C. F. Meyer, Germany.

The valedictory was delivered by Dr. W. W. Allport.

OHIO COLLEGE OF DENTAL SURGERY.—The twenty-first annual commencement of this College was held in the hall of the College Building, Cincinnati, March 6, 1867. The degree of "Doctor of Dental Surgery" was conferred by Dr. James Taylor, President of the Board of Trustees, on the following gentlemen: W. C. Stanley, F. McGinniss, F. Peabody, G. W. Field, H. L. Ambler, J. T. Child, B. Eaton, P. T. Clark, W. A. Grahame, R. F. Ludwig, J. R. Irelan, J. Ropp.

The valedictory was read by Prof. Spaulding, on account of the absence of Dr. Richardson, by whom it was written. The graduating class numbered twelve.

ILLINOIS STATE DENTAL SOCIETY.—The semi-annual session of the Illinois State Dental Society commenced yesterday, at 10 A.M., in the lecture-room of the First Methodist Episcopal Church. There was but a limited attendance of members, although the proceedings promise to be of unusual interest to dentistry, and the attendance to be larger before adjournment. In the absence of the President, the Convention was called to order by the Vice-President, Dr. O. Wilson.

The minutes of the previous convention were read and approved. The advisability of an adjournment until 2 P.M., was discussed. The attendance being meagre, it was thought there would be a greater number present at the afternoon session. A motion of adjournment was lost.

The Convention then proceeded to the regular order of business.

The following gentlemen were elected members of the Society: A. W. French, Springfield; H. J. Smith, Quincy; J. Deschaur, Chicago; A. H. Day, Pekin; John S. Marsh, Chicago; W. H. Truesdell, Elgin; P. Gibson, Peoria; Alfred Shipley, St. Charles.

The Convention proceeded to the election of officers for the Society for the ensuing year. The following gentlemen were elected:

President.—George H. Cushing, Chicago.

Vice-President.—A. W. French, Springfield.

Secretary.—M. S. Dean, Chicago.

Treasurer.—J. N. Crouse, Mt. Carrol.

Librarian.—W. W. Allport, Chicago.

Executive Committee.—French, Babcock, Lewis, Abbot and Kilbourne.

Springfield was unanimously designated as the place for holding the next convention of the Society.

The Convention then adjourned to 2 P.M.

Afternoon Session.—The Convention re-assembled at 2 P.M. The President elect, Dr. George H. Cushing, occupied the chair.

Dr. Cushing thanked the Society for the honor conferred in his selection, and hoped that his conduct as presiding officer would not only be satisfactory, but merit the mark of confidence which the Society by his selection expressed.

The Secretary read the minutes of the morning session, and no objection being raised they stood approved.

The committee appointed by the Convention of 1866, to prepare a design for a corporate seal for the Society, reported, through their chairman, that only the incipient steps had been taken in furtherance of that object. The committee asked and were granted further time.

Upon application for membership from W. C. Dyer and A. E. Brown, the rules were suspended and the applicants unanimously elected.

Dr. Honsinger suggested the devotion of from 9 till 11 every morning during the sitting of the Convention to clinical operations. The suggestion was favorably received, embodied into a motion and adopted.

A committee of three, consisting of Drs. Honsinger, Crouse and Brown was appointed by the chair to procure a room for the purpose of having the operations performed therein.

The semi-annual conventions of the Society were abolished, and the constitution so amended that hereafter the conventions of the Society shall be held annually on the second Tuesday of May.

Several specimens of morbid anatomy were presented the Convention. Dr. Smith submitted for the inspection of members a specimen of pecuniary value not only to its former but its present possessor.

Dr. O. Wilson read an essay on anæsthesia. He regarded nitrous oxide gas as dangerous, because of its rapid acceleration of the pulse. The patient experiences a transition in pulse which occasionally proves fatal. Chloroform and ether were the safest anæsthetics.

Dr. Kennicott, in his practice, used chloroform exclusively and with satisfactory results.

After an exhaustive discussion of anæsthetic dental agencies, the Convention adjourned until 11 o'clock this morning.

Second Day's Session.—The Convention of the Illinois State Dental Society convened pursuant to adjournment yesterday afternoon at 2 o'clock P.M. The morning session was omitted, as the members were desirous of participating in the clinical exercises held under the auspices of the Society. The several details of the theoretical and mechanical branches of the profession were suitably and practically illustrated by competent operators, rendering the clinic of great value.

Afternoon Session.—A larger attendance of delegates were present than when the session convened.

The Convention was called to order by the President, Dr. George H. Cushing.

The minutes of the previous meeting were read and approved.

Drs. Forbes, Eames and James, of St. Louis, were elected honorary members of the Society, and, being present, were invited to participate in the discussions of the Convention.

Dr. O. Wilson, of Aurora, made a few remarks explanatory of his essay on Anæsthetics read on Tuesday. An error had crept into the published statement of his remarks. He was made to say that nitrous oxide gas was the most dangerous of anæsthetics, and ether and chloroform the safest. He believed the very reverse, and in his practice used nitrous oxide exclusively, regarding it as the safest and most effective of anæsthetics.

The thanks of the Convention were tendered to J. H. McVicker, Esq., for his courteous proffer of the privileges of his theatre to members of the Convention.

The discussion of anæsthetics was resumed. No members manifesting a desire to discuss the subject, it was dropped and "Filling teeth," was taken up.

This department of dentistry was fully discussed; Drs. Crouse, Wilson, Kennicott, Forbes and Kilbourne, described their respective modes of operating, and the many peculiarities in filling which their practice elicited.

Extracting teeth and the treatment of exposed nerves, were next discussed exhaustively, after which the Convention adjourned till 11 o'clock to-day.

A chemical institute will be held from 9 to 11 A.M., in the lecture-room.

Third Day's Session.—The State Dental Convention re-assembled at 2 P.M., yesterday. No morning session was held, the delegates being in attendance upon a clinic, held in the office of Dr. George H. Cushing.

The President in the chair.

The minutes of the preceding meeting were read and approved.

Drs. Kennicott, Housinger and Smith, were appointed delegates to the American Dental Convention.

The discussion of the subject "Treatment of Dental Neuralgia," was taken up.

Dr. Judd regarded dental neuralgia as a subject involved in a great deal of mystery. Of all the diseases treated by medical men, this had been treated most empirically. In nearly all cases of facial neuralgia, decayed teeth are the exciting causes. In support of this view he related an instance where the wife of a physician was so afflicted as to undermine her general health. Her husband did not understand the pathology of the case, consequently the old remedies were unavailing. Application was made to the speaker for assistance. He examined the patient's mouth, and found it in a deplorable condition; extracted all of the patient's diseased teeth, and in two weeks she was about the house performing her duties. His experience was that all cases of facial neuralgia were occasioned by defective teeth, and that a removal of the manifest cause would eradicate the disease.

Dr. Clark, in his treatment of neuralgia, used nitrous oxide gas, which invariably affords relief, and precludes a return.

A delegate in fifteen years practice of dentistry found many cases of facial neuralgia. In his experience he found that though in some cases neuralgia originated in local irritants, in others it was attributable to constitutional and general causes. In the one, local treatment was essential, in the other constitutional. The general cause of the disease, however, is local, and it must be removed.

Dr. Kennicott thought the causes of facial neuralgia were local. He had under treatment at present a case of facial neuralgia which undoubtedly originated in uterine irritation. The disease should be properly understood to be successfully treated. He alluded to several cases of importance; one was a case of periodic neuralgia which was very persistent and ineradicable. An administration of anti-periodics prevented its regular recurrence. On investigating the cause of the disease he found it to be the result of a fracture of the skull. Proper remedies were applied, the cause removed, and the patient recovered. Another case was that of a young lady, who for three years had been troubled with facial neuralgia. An examination of her teeth found them ulcerated, they were immediately extracted, and ever since she has been well.

The Convention then adjourned till this morning.

Last Day's Session.—The State Dental Convention re-assembled yesterday morning; the President, Dr. George H. Cushing, in the chair.

The minutes of the preceding session were read and approved.

The chairman, alluding to the difficulties between the Goodyear Dental Vulcanite Company and dentists, made the following statement:

The recent decisions of the courts in the various cities where applications for injunctions have been made against dentists to restrain them from using the vulcanized rubber in their practice have been made use of by the Goodyear Dental Vulcanite Company to intimidate the profession into an acknowledgment and settlement of their claims, many dentists having the impression that they can be compelled to settle these claims without further legal steps being taken against them. This impression should be removed. No dentist is called upon to settle any such claim until he may be sued, and any dentist so sued will only be called upon by the court to give bonds to pay the royalty, provided the claims of the Company are sustained by the Supreme Court, and any person who belongs to the Association, or who may become a member, for defending such suits will be provided with counsel by the Association.

Discussions then followed upon "Vulcanized Rubber," and "taking impressions and casts." These topics were exhaustively treated, much new and general information being elicited by the discussion.

The following gentlemen were appointed to the American Dental Convention at Cincinnati: E. H. Kilbourne, Aurora; O. W. French, Springfield; W. W. Allport, Chicago; Robert Gibson, Peoria; J. A. Kennicott, Chicago; J. A. Crouse, Mt. Carroll; J. P. Folz, Mendota; H. J. Smith, Quincy; H. H. Day, Pekin; H. S. Reber, Chicago; S. F. Abbott, Wilmington; W. Albaugh, Chicago.

The following was offered by Dr. Kennicott and carried:

Resolved, That this Association unqualifiedly condemn the practice of members of the dental profession, of taking students to be sent forth to practice upon a confiding community after only from three months to two years study, and for a pecuniary consideration, and would recommend that students be taken for a term of not less than three years of study, in addition to graduation.

The Convention then adjourned *sine die*.

REMOVAL OF TEETH FROM VULCANITE PLATES.—In addition to the suggestions heretofore made by some of your correspondents in relation to the removal of teeth from vulcanite plates, permit me to mention one, which, having adopted, I have found to be superior to all other methods, for the reason that time is saved and the base remains *uninjured*.

Fill the inner portion of the plate with plaster about $\frac{1}{16}$ of an inch higher than the ridge; place the plate on a glass with teeth upward, until plaster is hardened; brush teeth to be removed slightly with oil; heat the anterior points of the teeth in the flame of a spirit-lamp, being careful that the flame does not touch the rubber, for about fifteen or twenty seconds; if held sufficiently long, the slightest touch will cause the teeth to fall off, and the plate may be used again. Even without the plaster, I have attained the same result by this method, but the use of plaster is preferable.

—D. C. Edmunds, Iowa.

THE GOOD WORK GOES ON.—North Carolina, Virginia and Arkansas, have each laid the foundation of dental schools. In the west the societies are flourishing. The Legislature of Maine has chartered a State Dental Association. We extract from their doings :

It was voted to send delegates to the next meeting of the American Dental Association, and Drs. E. Bacon, Wm. Randall, A. K. Gilmore and Thomas Haley were chosen as such.

The responsibility of the profession in regard to dental students and the proper means of elevating the standard of the profession, was interestingly and ably discussed by Drs. Gilmore, Coffin, Johnson, Fillebrown and Pinkham. It was affirmed to be the duty of every member of the profession to form a candid judgment as to the natural qualifications of any person desiring to become his pupil, and if in his opinion not adapted to the practice of dentistry, to decline to take him as such, and also to advise him to seek some other calling. That it is the duty of every one entering the profession to graduate from some one of our excellent dental colleges, and also of the younger members of the profession now practicing, to avail themselves, if possible, of the same privileges; that not many years hence the people will as surely demand of every dentist his credentials as they do now from every physician.—*Dental Register*.

NEW SURGICAL BANDAGE FOR FRACTURES.—The starch apparatus has long been a favorite application to fractures. For starch as a thickening and solidifying material, M. Velpeau has recently suggested soluble glass. It possesses many advantages over anything else yet used for the purpose. It is rigid, affording a much stronger supporter than any of its predecessors, is easily applied, and very neat and clean, it hardens in two or three hours, and can be readily removed by softening with water in which it is soluble at any temperature. It is now quite generally used, both in Europe and this Country. In Baltimore it is extensively made of uniform composition, as one of the ingredients in the manufacture of artificial stone, and every one who desires to use it can easily obtain it at a moderate price, and of any consistence they may desire.—*Am. Jour. of Dental Science*.

In the Mariana Florida Courier, we find the following account of an apparatus constructed by Dr. T. W. Hentz of that place, for which he deserves great credit.

Mr. Milton Mosely of this county was wounded during the war in his face, carrying away his entire upper lip, and nearly his entire nose, his palate was cleft its whole length, and all the front teeth carried away, making his appearance as unseemly as possible, and interfering with his speech and respiration, to such an extent as to be extremely annoying. Dr. Hentz made for him a palate and teeth, an india rubber nose, supported at its base by wires attached to the plate, and at its upper extremity by a pair of spectacles. Also attached a moustache to the upper lip, thus converting Mr. Mosely into quite a handsome man. His difficulty in speaking is removed, and the appliance, unless by close inspection, cannot be distinguished from a natural nose and palate. This ingenious contrivance can be removed and put back at pleasure.

"ALLOYS OF STEEL WITH PLATINUM are said to be very perfect in every proportion that has been tried. The best proportion for edge instruments is about 1-5 per cent. of the latter metal. Equal parts by weight form a beautiful alloy which takes a fine polish and does not tarnish; the color is the finest imaginable for a mirror."—*Sci. Amer.*

SAND BRICKS.—In reply to an inquiry for a method of making substantial bricks of sand, a correspondent of the *Scientific American* says: "Two parts of potash, soda, or other alkali, to one of sand, fused, will then dissolve in water, making soluble glass. To this add sand, *quantum sufficit*, and press into mounds of required shape. This will make a hard vitreous brick or cement."

TO COPY MANUSCRIPTS.—The following method for obtaining copies of manuscript papers will be of great service to those who wish to preserve copies of what they write: "Put a little sugar in common writing ink, and with this write on common paper, sized as usual. When a copy is required, take some unsized paper and moisten it lightly with a sponge, and apply the wet paper to the writing, and pass lightly over the unsized paper a moderately heated iron, and the copy is immediately reproduced."—*Amer. Artisan.*

Our Book Table.

THE AMERICAN JOURNAL OF DENTAL SCIENCE.—We have often marvelled that Baltimore, a city so justly proud of its fine old dental school, and so memorable as being the scene of the labors of the lamented Dr. Harris, did not sustain a dental journal. We have been relieved at last by seeing the face of our old friend, the "American Journal of Dental Science," after a long state of coma. Messrs. Piggot and Gorgas are the editors. These men have ability, and the journal should secure a large circulation. The number before us is filled with excellent articles, yet, if we could carp at any thing, we might hint that the contributions are somewhat too grand and didactic for the level of the masses. It is, also, evident that it has "business" as well as "literary" editors, as the heavy mass of advertisements in the rear show that the publishers have the shrewdness to secure the "sinews of war." We wish it success.

MESSRS. LINDSAY & BLAKISTON have in press, a new edition of Dr. C. A. Harris' Medical and Dental Dictionary. This great work is to be improved and enlarged by Dr. Gorgas, Dean of the Baltimore College of Dental Surgery. We have not seen a copy, but we express the hope that it may faithfully portray the changes and improvements that have resulted from the labors of the profession.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION.—The chairman of the publishing committee (Dr. Shephard), states that this work will be issued in a few days.

THE DENTAL QUARTERLY.

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PHILADELPHIA, SEPTEMBER, 1867.

No. 3.

USES OF OXY-CHLORIDE OF ZINC.

IF oxy-chloride of zinc was not so easily affected by the fluids of the mouth, it would be the best thing at present known for the preservation of carious teeth. All who have had any experience with it are certainly cognizant of its almost peculiar virtue in preserving the color of the dentine—the surface from which it is at any time removed being cleanly and white, if properly prepared at the outset. It has also a soothing effect upon sensitive dentine; and although it may produce a slight or even a sharp pain on first introducing it, yet this in a short time gradually subsides. We have frequently used it in nerve exposure, when the pulp was not inflamed, by placing a small pledget of cotton and creasote over the exposed part previous to the introduction of the paste. In the course of six months, if the tooth gives no further trouble, and the size of the filling will admit of it, it is advisable to cut a large under-cut pit, and insert an amalgam or gold filling over it, in such a manner as entirely to cover in every case the oxy-chloride. The latter will shield the pulp, and be unaffected in a great degree by cold or heat.

By using it thus as a foundation for a harder filling capable of resisting the action of the fluids of the mouth, large cavities may be filled in a much shorter space of time without pain or weariness to the patient. When a pulp is almost exposed, and the pressure requisite in inserting a gold filling is apt to give pain or produce inflammation, oxy-chloride should invariably be used as a base, if the depth of the cavity will admit of it. In some cases it is preferable to fill the whole cavity with os artificiel, and before it is thoroughly hardened, excavate a cavity of proper shape to receive the gold or amalgam; being careful, as we said before, to shield the foundation filling at every point. We have filled very large cavities in this way, and have been better satisfied with them than if they had been filled entirely with gold. When it is desirable to avoid discoloration of the

tooth on filling with amalgam, especially in bicuspid teeth, three-quarters of the cavity at least can be filled with the oxy-chloride, being careful to press it well against the walls and the floor.

In filling with gold in these as in all other cases, it should always be borne in mind that an adhesive gold filling needs a firm anchorage and a good under-cut throughout the cavity, much more so than soft gold. Much time may be saved by attending to this at the commencement. Even plastic and crystal gold should be worked in the same way; and the annoyance of having the whole mass come out when being filed or finished up will then be avoided.

A. T.

MEDICAL AND DENTAL EDUCATION.

WE have received the Fifth Annual Announcement of the Philadelphia Dental College, and notice that, besides a change in the Faculty, three new departments have been established, two of which have in a measure been made up of the ruins of one. The instruction from the chair of Institutes of Medicine embraces physiology and hygiene, and practical application is made of the laws of these two sciences. Vivisections of the lower animals are also made. The consideration of that portion of the *Materia Medica* deemed requisite will be comprised in the teachings from the chair of Institutes of Dentistry. Principles and Practice of Surgery embraces principles of practice, general surgical diseases, operative surgery, and clinical surgery.

This we cannot but regard as a step in the right direction. A dental college should be as much a medical college as possible, or else a dental student should be a graduate of medicine; and we think the time is not far distant when every practitioner, alive to the interests and anxious for the proper education of his student, will insist upon him acquiring a medical as well as a dental education. Thirty or forty years ago the pioneers of dentistry were almost all graduates of medicine; but accessions to the ranks from other trades and callings, of men with no other recommendation than that of being good mechanics, bade fair to make dentistry a trade rather than a profession. Our dental colleges have in a great measure corrected this evil, and in a few years we have no doubt every dentist will be a doctor of dental surgery.

It would have been much wiser, we think, if dental colleges had been organized in the first place in such a manner as to give the student a full medical as well as dental education—conferring upon him the degree of doctor of medicine, a degree which even our college professors are more proud of and fond of displaying than that of D.D.S. We are therefore

pleased to see that a graduate of a medical college is looked upon the same as a dental practitioner of eight years' standing, and entitled to examination by attending one course of lectures. We hope this will spur on our young men to perfect themselves in medicine and surgery, and by hard study and practice to make themselves indeed professional men.

A. T.

OSSEOUS UNION OF THE BUCCAL FANGS OF A SUPERIOR MOLAR.—Dr. J. G. Shatto, of Bloomfield, Pa., has sent us a right superior molar, with the apices of the buccal fangs fused together, which he extracted from the mouth of a young lady of that place. There were six or seven other teeth removed at the same time, all of them more or less in an abnormal condition.



DR. ARTHUR'S MONOGRAPH ON DECAY OF THE TEETH.

Editors Dental Quarterly:

IN the long list of names of men who have labored in the dental ranks, we cannot find a brighter or a better one than Dr. Arthur. I think you would do a most acceptable service to the profession which he adorns by allowing me to notice his work on "Decay of Teeth," just issued by Mr. Murphy, of Baltimore. The book has been issued in a creditable style, and Mr. Arthur's character will secure it a candid reading, even by those who most disagree with him in his conclusions. While illy educated men have been flying off into baseless theories, the author has been seeking steadily for the truth, and in singleness of purpose and completeness of life has, alas! too few equals in our profession. The author divests his book of all verbiage; it is like its author, plain, honest, and easily understood by patient and dentist.

We open the book at the first chapter. It contains eight or ten pages, and in plain language gives the anatomy of the teeth. We are delighted with the simplicity of the author. It has a charm for the non-professional reader, which will secure for it an extended circulation.

Chapter XI. goes into the causes of decay. In his views Mr. Arthur does not express a desire to astonish you by some startling theory. He is not ambitious to make you quarrel with him. He only wants to *benefit* you.

In the causes of decay the author enumerates: "Hereditary condition of the system, in which all the tissues of the body are more or less imperfectly formed." "Although the general condition of the system may be good, the structure of the teeth may be imperfect, in consequence of some hereditary defect." "The teeth may be defective in structure in consequence of some disordered condition of the system at the time of their formation."

We have not space to follow Mr. Arthur all through his excellent book. He is a strong champion of the file, *when properly used*, and the leading views of the man may be expressed thus: When teeth which are in contact have the decay removed from them by the file, the decay will not return, unless there is a strong predisposition to decay, or the teeth are neglected sadly. The saliva is alkaline, the secretions of the mouth are acid, and to some extent they neutralize each other. Defective teeth and teeth in contact retain the acid mucus until the teeth rot. The structure of the teeth also exerts an influence. When there is an excess of the mineral element, it causes a liability to decay. When there is a deficiency of the mineral element, the teeth are soft, and liable to decay from this cause. Alluding to children's teeth, the author says:

"If decay occur on the surfaces of contact of the incisor teeth of a child before it is twelve years old, all the teeth, with the exception in most cases of the incisor teeth of the lower jaw, will decay sooner or later at the points of contact. The exceptions to this rule are rare." "This is the whole explanation of the decay of teeth; they are made of a substance capable of being decomposed by acids. In order to prevent this (continued decay), the whole decayed surface must be cut away (by the file or otherwise), and the surfaces kept from coming again into contact."

I must avail myself of the privilege of noticing Dr. Arthur's work further in the December number of the *Quarterly*.

Philada., Aug. 9, 1867.

Yours truly,

J. D. L.

HOTEL DES TUILERIES, Paris, July 10th, 1867.

MESSRS. JOHNSON & LUND, PHILADELPHIA:

If I remember right, I promised to tell you all I saw in this Capital of Capitals. Well, wait till I get home and I may *attempt* it, but I can't do it now, I have seen so much, so many Hans, Greeks, Norwegians, Moors, Tartars, Englishmen, Chinese; such a crowd of whirling figures. I have so many strange sights in my eyes, and such a whirl of machinery in the Grand Exposition in my ears, that it is almost impossible to tell anything lucidly. I hear the saying in my ears every few minutes, "He who has not seen Paris, has not seen anything."

And verily, it is a great city. Every sovereign for the last six hundred years has been adding to its magnificence. I see all about me the evidences of the present Emperor's power. Whole districts, "plague spots," as big as the old city proper of your city, have disappeared in a month, the Faubourgs have been enlarged, and wonders of architecture have been built. The Paris of twenty years ago bears no resemblance to the Paris of to-day—all is grand, magnificent; but I don't like it. I like no French rule. I feel that there is none of the blessed freedom that we have in the United States. I sat in a *café* an hour ago talking pretty freely on the tyranny of France, when my French friend nudged my elbow and whispered—"Ces mures, Monsieur, puevent avoir des yeux." I took the hint and left the place. I would sooner live in La Vendee (the Ireland of France), than

in Paris. I would sooner taste a cup of water from the old spring in Chester County, than the finest wine in France. Everything is quiet in Paris, but it is the quiet that precedes the tornado. Eugenie has gone over, body and chemizette, to the Jesuits; the young Prince is a feeble child, and Napoleon begins to fail. You know the citizen king, Louis Phillippe, packed Louis Napoleon off to the prison of Ham, and the Emperor Louis Napoleon packed Louis Phillippe off to London twenty years ago. Who can say who will be ruler in twenty years from '67?

I had a pleasant passage in the Pereire, Capt. Duchesne. We entered the harbor of Brest, May 14th, after ten days of sea water. From Brest we ran, in comfortable cars to Paris, distance under 500 miles. I would advise every one who comes here to get a passport. It makes you feel comfortable when you see the "U. S.," and it may save you serious trouble. "Monsieur" is polite, but he is sharp as a hawk. I would also advise you to learn more French than will enable you to ask for an *omelette*, or plate of *bouilli*. You will have a dull time of it if you do not. And let no one think he can live cheaply in Paris. On the continent you can usually live more cheaply than in England or the United States, but not in Paris now. The Great Exposition has made a vast stomach of Paris. My room costs me about \$6 per day, exclusive of food. But I must hasten on to tell you about the Exposition, or the French Industrial Palace, as it is called.

I can best convey an idea of its shape by asking you to suppose a cart-wheel lying before you, then consider the hub to be a beautiful garden, and eight rows of buildings radiating from the centre like the spokes of the wheel. It is located on the Champ de Mars, about a mile and a half from the centre of Paris. The space devoted to the Exposition I suppose to be about two and half square miles! I should have said that running from the garden are eight covered passages, each having the name of a different nation, and in these passages the goods are exhibited. France has about one-half of the space devoted to exhibitors, our own country one-seventh, England one quarter, Belgium a goodly share, etc. To see this you must enter the Grand Gate of the principal avenue, and passing some distance you get to the door of the exhibition building, and on your left you see the English engines, and on your right the French. And here I may say that I have been to the Exposition fifty times, and have not seen one-half of it. Let me mention the United States articles.

I confess that my national vanity was wounded; some lay the blame on the commissioner; I don't know, but there is a big fault somewhere. Our goods are piled about in spots, without order or classification. If I attempt to tell you what I have seen, I should tire you. The difference between American and English machinery is apparent at a glance. I believe I could tell a piece of English work from American with my eyes shut, just by *feeling* it. Our machinery is light, polished and strong. John Bull seems to have but one idea, and that is to make his work *heavy*. The Allen engine, which Mr. Porter, of New York, sent here, beats all France and England can produce. I must not forget the Grant engine, built in Boston, which looms up a head and shoulders above anything made in Belgium, France or England.

It is a little singular that we have so little national pride, and so much

in anything that concerns our pockets. An hour ago I talked with one of the most distinguished American inventors. I said to him, "Mr. —, how is it that *you* have nothing here?" "Pshaw," answered he, "I don't want any of their leather medals. I came here for ideas. I want money." The best inventors in the United States have kept their wares at home. Everything here is "show goods." It is only Louis Napoleon's big show.

In proof of this I refer you to an article in which you have some interest, namely, artificial teeth. Your competitor had a gorgeous set-out of chairs, instruments, everything from a chair to a nerve broach. His display was as fine as upholstering and money could make it. And now, friends Johnson & Lund, I should be a poor friend if I did not tell an unpleasant truth. *The teeth you sent here were not near as good as the average I saw in your store in Philadelphia.* Nevertheless I took several, in fact all the dentists I knew in Paris, and one eminent Parisian dentist who had returned from an examination of the wares at Sevres, and we compared Johnson & Lund's teeth with others, and all the dentists I saw admitted that your teeth resembled the natural ones in shape, enamel and body, much closer than any of the rest. Some dentists were so struck with your *gum* color that they would hardly look at others a second time.

Let me whisper a word in your ear, *mon ami*. Of course people laugh at the idea that there was any attempt at discrimination in the awards made. I give you a few items which show how correct my statement is.

C. W. Field—Atlantic Cable—grand prize. But when I find Dr. Evans, of Paris, receiving for a sanitary collection the same prize that was received by Field, who crossed the Atlantic thirty times, who spent the fortunes of himself and friends, who employed a force of 600 men four years in cutting a road across New Foundland, who achieved the greatest triumph of the 19th century, and who would undertake to tunnel the Atlantic to-morrow, and *would do it*, why I only stare.

Mr. Meyer, for Louisiana cotton, not unusual in quality, *gold* medal; Mr. Barnes, Surgeon-General U. S. Army, for surgical apparatus, most valuable for the preservation of human life and health, *silver* medal; Calver & Co., New York, for some common *hams*, *silver* medal; Appleton & Co., some of the most splendidly printed and bound books ever issued by any publisher, *bronze* medal. Whilst Mr. — received a gold medal; 358 American exhibitors, including Spenser rifles, Colt's rifles, microscopic instruments, complicated and novel machinery from Morris, Tasker & Co., steam engines, model farms, &c., receive only bronze medals, or "honorable mention."

Dr. Evans, who received a grand prize, and who assisted in procuring the same for Mr. —, over the productions of thought and hand, I believe put some of Hill's stopping in a tooth in the jaw of *Le Jeune Napoleon*. So you see there is nothing like having a "friend at court." I will return in the City of Washington. No more from

Yours, truly,

R. L. C.

P. S. You must be sufficiently gratified by seeing that you are the only party that received a medal exclusively for *Artificial Teeth*. It must be the more grateful to you, as it is an award for *merit*, and not display of money.

THE FILE AS A DENTAL INSTRUMENT.

Progress, is not always improvement. Change, as often travels downward, and backward, as upward and onward; and fashion, with its frailties and follies, plays not less fantastic tricks in the domain of science, than upon the broad surface of society. In this day of "radical" and startling change in the world without, and the world within, it may be profitable to get back to some of the old "landmarks," and take a "new departure."

The furor for vulcanite and coralite, for cheoplasty and chisels, for gouges and drills, for automatic and pneumatic pluggers, for rubber wedges and wooden wedges, for *mallets*, and may we not anticipate,—for sledges and tilt-hammers, for amalgams, "Hill's stopping," Oxide of Zinc, and "Woods' metal," for shredded gold and sponge gold, for the thousand and one *new* things that thrust themselves upon us at every turn, has appeared from our point of view, to cause many to overlook, or almost forget, a great deal that is *old* and *tried*, and which has been found *true* and *reliable*, and among other things, one of the oldest, simplest and yet when intelligently used, one of the most valuable and efficient instruments ever placed in the hands of the dentist.

The file, if not forgotten, seems only to be remembered to be decried and denounced in some "new light" Dental Associations, where prayers and politics, psalm-singing and soft-soldering-dental patents and "duplex elliptics" combine in one harmonious and delightful *melange*; and abundantly betoken the present status, and illustrate the present progress of American Dentistry.

No one attaches greater value, or places a higher estimate upon the operation of "filling teeth" when the work is done in a proper manner, and with a suitable material, than the writer of this article. "Tooth-filling" must ever constitute one of the leading features in dental surgery, and excellence in this individual operation, may well repay, and richly compensate a lofty ambition. And further, no one has a higher appreciation of the better class of operations usually denominated "mechanical" or "artificial," these are all indispensable, and invaluable in their several and proper places.

But with the foregoing acknowledgment and concessions, we maintain, that the (now almost obsolete) use of the file, is equally necessary to the best results desirable from correct dental practice—both in a prophylactic and remedial sense. A long, and somewhat critical observation in our own practice, and of the work of some of the Fathers of dental surgery (who have filled up the measure of their usefulness and honor, and passed away) as well as the practice of some of the most eminent who still survive, has abundantly satisfied us, that untold numbers of teeth are permitted to become the subjects of disease and decay, particularly upon their approximal surfaces, that might be protected, and preserved by the judicious use of the file. And more than this,—that *thousands* of teeth are sacrificed to a blind and over-weening confidence in the operation of "filling."

If compatible with the limits of this paper, or the object we have in view, we could present numerous and well authenticated instances in our own, and in the practice of more distinguished operators than we claim to be, of the permanent preservation of the teeth by the file; which had been

adjudged hopeless and incurable, so far as "filling" or any other operation could affect them, and which were *filed* as the only expedient, or experiment that could be applied. We have seen in the same denture, part of the teeth lost, under the best efforts of those most skilled in the operation of "filling;" and the remaining teeth, which have been abandoned as hopeless—a little mutilated, it is true, but sound and healthy, and satisfactorily performing all the functions peculiar to these organs.

We do not propose now to enter into any description of the *file*, its modifications of shape, its qualities of temper, cut or finish; nor do we design any observations upon the indications for its employment, or the best and most judicious methods of using this instrument, these subjects will all be more completely and clearly treated at another time, and in another place.

Our object in penning this article, is simply in our own plain way, to call back the attention of dentists, to an old, invaluable, but almost ignored or forgotten instrument; which used with judgment and skill has, and will continue to confer on humanity a blessed boon; and upon dental science, some of its proudest trophies, and most brilliant triumphs. We wish to direct in some degree, the attention of the profession, from utter absorption in the more *doubtful* and *questionable* features, methods and materials of modern dentistry; and induce practitioners, to consider well, if they have not already lost a vast amount of valuable substance in the eager chase after shadows, if they are not throwing aside old and better friends, than they are likely to make from the ephemera of the present day. We are not inimical to *true* progress and improvement, we are not wedded to old things, *because* they are old; but experience has taught us to repose very little confidence in, and attach very little value to what is *simply new*.

We may say in conclusion, that the opinions and reflections we have submitted, are not wholly peculiar, they are shared, we are persuaded by some of the abler members of the profession, and we anticipate ere long, an endorsement and a more full and clear presentation of every point touched, by one of the most distinguished of the Alumni of the Baltimore College.—*Am. Jour. of Dental Science.*

DENTAL SURGERY AS APPLIED IN THE ARMIES OF THE LATE CONFEDERATE STATES.

DENTAL SURGERY has assumed such importance within the last few years as to place it much above the position which was at one time assigned it, when barbers and blacksmiths were about the only representatives of the profession. Concerning the primitive condition of the art in this city, the late, venerable Samuel Mordecai in his delightful book, *Richmond in Bygone Days*, says:

"Now adays the profession of dentistry gives lucrative employment in our city to a score of practitioners. In the days of my boyhood, only one *Tooth-drawer*, who probably never heard the word dentist, did all the work and all the mischief in the dental line.

"Peter Hawkins was a tall, raw-boned, very black negro, who rode a raw-boned, black horse, for his practice was too extensive to be managed on foot, and he carried all his instruments, consisting of two or three pul-

likins in his pocket. His dexterity was such, that he has been known to be stopped in the street by one of his distressed brethern, (for he was of the church,) and to relieve him of the offending tooth, gratuitously, without dismounting from his horse. His strength of wrist was such, that he would infallibly extract, or break a tooth, whether the right or wrong one. I speak from sad experience, for he extracted two for me, a sound and an aching one, with one wrench of his instrument.

"On Sundays he mounted the pulpit instead of black bare bones, and as a preacher he drew the fangs of Satan with his spiritual pullikins, almost as skillfully as he did the teeth of his brother sinners on week days, with his metallic ones."

It is undeniably the case that, even in this period of the world's progress, there are some persons who profess to have but little faith in dentistry and who boast of never having required dental operations; but it is generally found that they are blessed with very sound teeth and consequently, would have about as much occasion to employ a dentist as a perfectly healthy man would in calling in a physician. And stranger still, there are actually *physicians* who are not only skeptical of dentistry and regard it as a "modern innovation," but even look upon its practitioners as upstarts, and as aspirants for titles and honors which belong only to themselves. It is perhaps unnecessary to say that, generally speaking, those who are so jealous of an encroachment upon their rights and privileges are either very old men who have followed the same beaten track, and prescribed the same medicines for the last half century; or else very young ones with little or no brains, whose appreciation of a diploma is based upon the difficulties and length of time in acquiring one, extending generally over a considerable period. In spite, however, of the prejudices of some, it is true, very few narrow minds, society at large appreciates the importance of dental surgery as bearing upon the health and comfort of every community, and as a rule, its practitioners keep pace with the age in education, refinement and accomplishments. Every year witnesses the advent of candidates for public favor whose training in our colleges has been careful and complete, the introduction of some new invention or the application of some new principle; and it is with some pride that we compare the dentistry of to-day with that of fifty years ago.

During the progress of the late unhappy war, it soon became apparent that the soldiers of the Confederate armies stood sadly in need of the services of dentists. Most of them being from extreme sections of the country, without means, being cut off from all communications with their homes, and their pay being totally inadequate to meet the most ordinary and pressing wants, it was out of the question for them to attempt to pay for dental operations. Particularly when it is remembered the price of one gold filling in the depreciated currency of the Confederacy, was more than six months pay of a private! The price demanded for gold foil in 1864 and the beginning of 1865 was sixty-four dollars per oz. in gold coin. This amount in confederate money would be, three thousand eight hundred and forty dollars, for the prevailing price of gold was sixty for one. Having to pay so enormously for materials—the value being enhanced from the fact of their having to run the blockade—the charges of dentists were proportionally high. The charge for a gold filling was \$120, for extracting

a tooth \$20, and for an upper set of teeth on gold or vulcanite base, from \$1800 to 4000. Let it not be understood that high prices were confined to dentistry alone. It was no uncommon thing to pay \$1800 for a coat, \$300 for shoes, \$1000 for cavalry boots, and from \$300 to \$500 for an ordinary felt hat. A man considered himself lucky in being able to purchase a turkey for \$300, which was indeed above the gold standard, but confederate money was plentiful and turkeys were scarce, and the scarcity became greater in proportion to the frequency of the raids of Federal commanders, so that before the close of the war it was with difficulty that fowls could be obtained for love or money.

From the above examples of prevailing prices it is very clear that a confederate soldier getting eighteen dollars per month could not afford to pay for dental operations, and the question arose, what was to be done for the amelioration of his condition? This question was solved by the rigid conscription laws passed by Congress; dentists were conscripted, and the Surgeon General of the late Confederate States, with a forethought and humanity characteristic of the man, determined at once to make their valuable services available to the armies.

It must not be imagined that dentists were conscripted without a show of resistance on their part. Physicians of "seven years practice" were exempted from military service, and as dentists were not mentioned, it was contended by some that Congress intended to include them as *special practitioners*. This interpretation of the law met with not only the most violent opposition from some few old foggy physicians, who ridiculed such assumptions, but was overruled by the war department through its representative Judge Campbell, and the conscription of dentists was ordered to be proceeded with at once.

Already eminent legal opinion had sustained the dentists that they were exempt by the law as *physicians*,* but to test a matter in which so many were interested, Dr. Hunter of North Carolina, brought his case before the courts of his State, and Judge Pearson decided that *he was exempt*. Congress, having heard of the decision in this case, upon revising the exemption laws, determined that no ambiguity of language should lead to any further exemption of dentists. They seemed to have forgotten in consulting the requirements of every community, that the same efficiency could not be reasonably expected in dentists over the the conscript age as in younger men. It does not follow that the older a man is the better the dentist. Good eyesight and a steady hand are indispensable. This enlightened body, however, not looking upon the matter in the same light, had inserted in the clause exempting physicians, "the term physicians *not to include dentists*," and thus the question was settled.

Surgeon General Moore immediately made application to the Bureau of Conscription for the detail of dentists for duty in the hospitals, and after some months of experiment, he caused to be issued the following order.

"OFFICE OF THE MEDICAL DIRECTOR C. S. HOSPITALS IN VIRGINIA.

"RICHMOND, VA., Nov. 4, 1864.

"CIRCULAR No. 15.

"I. As far as practicable in future, the operations of dentistry required

*Reference is made particularly to the late Gen. Geo. W. Randolph, Sec'y War of the C. S.

in General Hospitals in Virginia, will be performed by officers, soldiers or conscripts assigned to those duties, who are dentists by profession.

"II. Examinations will be made, at such times as may be fixed by the surgeon in charge, of each officer and soldier admitted into hospitals, and the necessary operation performed with the concurrence of the attending Medical officer.

"III. Dentists are expected to be provided with their own instruments, but the necessary materials and files will be purchased with the hospital funds, and requisition made for other instruments thought necessary.

"IV. Dentists will have the rank, pay and perquisites which their position in the army entitles them, and in addition, such extra duty pay for extraordinary skill and industry, as the Surgeon General will allow, in accordance with general order. No. 66, A. & I. G., office, current series.

"V. Monthly reports of Dental operations and accompanying registers in accordance with forms furnished, will be forwarded through the Surgeon in charge and through this office, to the Surgeon General by the 5th of the month succeeding.

"WM. A. CARRINGTON,
"Medical Director of Gen. Hospitals in Virginia."

It would be next to impossible to form an idea of the wretched condition of the teeth of Confederate soldiers. The great majority had been several years in service without as much as even having had their teeth examined; and this neglect coupled with habits of carelessness, an absence of tooth brushes, and the miserable and scanty food upon which they subsisted, only hastened their destruction.

In selecting a material with which to fill the teeth of these men, it was desirable to have something which was not costly, that could be easily applied, and which would at any rate, preserve them until such a time when gold might be substituted, and for this reason amalgam was chosen.

Without stopping to discuss the merits or demerits of this material, it is enough to say that, for this purpose, it answered admirably. In every case the carious portion of the tooth was thoroughly removed, and when a large number of teeth required attention, the operations were greatly facilitated by the use of it.

The principal operations performed were filling, extracting teeth and removing the tartar, which from neglect, had accumulated in nearly every mouth to a most extraordinary extent; the adjustment of fractures of the bones of the mouth and the treatment of wounds of the face. From the time of the assignment of the first dentist to duty in March, 1864, the number of operations performed exceeds all belief. A day's work consisted of from twenty to thirty fillings, the preparations of the cavities included, the extraction of fifteen or twenty teeth, and the removal of the tartar *ad libitum*!

Besides a detailed monthly report of each operation performed, in which the date, patient's name, rank, regiment, company, and the operations, were required to be given, a summary was attached in which they were consolidated after the following order: Number of patients operated on—Teeth extracted—Fillings inserted—Teeth cleaned of tartar—Fractures adjusted—Other operations—Total number of operations performed.

Concerning fractures of the bones of the mouth, the number of cases

was not so large as might have been expected from the fact that, in the year 1864 to which reference is made—the fighting was in a great measure from behind breastworks, when of course the head is more exposed than the rest of the body. In such cases as presented themselves in and around Richmond, the reduction of the majority of them was effected through the agency of *gutta percha*. The case of Jas. H. Hutchinson, Co. C, 53d Georgia regiment, 2d division, Jackson Hospital, affords an example. His was a fracture of the superior maxilla, left side, involving the first and second bicuspid teeth. After forcing the fracture into its proper position, *gutta percha*—having been softened in warm water—was pressed on the teeth included in the fractured portion and extended to the firm teeth, the lower jaw closed and the teeth embedded in the lower portion. It was then carefully removed, placed in cold water to harden and readjusted afterwards. This accomplished all that could be desired. The fracture was held perfectly firm, the material afforded a pleasant rest to the jaw, and left an opening through which food might be received, and at the same time, it was not affected by the secretions of the mouth, or by discharges from the wound.

The case of Lieut. Morehead—North Carolina Cavalry, quartered in general hospital No. 10, was similar to the above, only more complicated. A minnie ball carried away the canine, first and second bicuspid teeth, left side, inferior maxilla, fracturing the bone to the left of the *symphysis*, passed under the tongue, the counter stroke fracturing the right side of the bone near the *mental foramen*, and passed out under the angle of the *ramus*, carrying fragments of teeth and bone with it. Bond says, in his work on dental medicine, Article Fractures: “The general treatment of fractures consists in meeting the following indications: 1st. To restore the displaced pieces of bone to their natural position. 2d. To keep them there; and 3d. To afford any additional aid which the nature of the injury and the constitutional circumstances may require.” The two first indications were fully met in this case, but to ensure certainty, after the *interdental* splint had been applied, an outer splint of the same material was made to conform to the shape of the jaw, and the common bandage applied. The next day the patient feeling so entirely free from pain, he was furloughed to go home, where he soon recovered. The only thing which the writer of this article claims for the use of *gutta percha* in adjusting fractures of the jaw bones, is, its originality as far as concerns himself. Pasteboard softened with vinegar and water has been the usual material employed in such cases; but it appears to the writer that any man possessed of common sense, and knowing the peculiarities of *gutta percha*, would naturally fix upon this substance. Dr. James Bolton, in a communication to the *Richmond Medical and Surgical Journal*, states that he has used it in cases of fractures of the jaw bones, and no doubt others have with the same success.

The interdental splint of Dr. Bean of Atlanta, Ga., upon which an elaborate article was furnished the January number of the journal above referred to, by Dr. Covey, deserves especial mention. But from the subjoined letter even this appears to be nothing new. The writer having heard of the accident to Mr. Seward in April, 1865, by which he sustained a fracture of the lower jaw, was emboldened by the dictates of humanity to call

the attention of the Surgeon General of the United States to this splint, and received the following reply :

SURGEON GENERAL'S OFFICE,
WASHINGTON CITY, D. C., *April 26, 1865.*

SIR :—I am directed by the Surgeon General to acknowledge the receipt of your letter of the 24th inst., calling his attention to an interdental splint (Dr. Bean's) as likely to be of service in Mr. Seward's case of fracture of the jaw, and to inform you that the same splint is now made by Mr. Gunning in New York.

Very respectfully your obedient servant,

By order of the Surgeon General.

(Signed,)

C. H. CRANE, *Surgeon U. S. Army.*

While this reply disposes quite summarily of Dr. Bean's interdental splint, it is questionable if Mr. Gunning *was* making precisely the *same* splint, though it might have been constructed on the same general principles.

During the occupation of Atlanta by the Confederate forces this splint was applied in over *one hundred cases* with such invariable success, that Surgeon General Moore ordered Dr. Bean to Richmond, in order that his splint might be laid before the army Medical Board of the Confederate States. A meeting of the Board having been ordered at the private office of the writer, the drawings and models exhibited and full explanations made by Dr. Bean in person, the members, whilst arguing that the principles of it were not entirely new, were unanimous in recommending its general adoption ; and shortly afterwards—dentists on duty having been instructed in its construction—the Surgeon General ordered a ward to be prepared at the Robertson hospital for the exclusive treatment of all cases in which it could be applied. A minute account of this splint having already been published, it is scarcely necessary to enter into a particular description here. Suffice it to say that, models of the parts having been obtained by a peculiar and scientific process, it is constructed of *vulcanized rubber*, instead of *gutta percha*, and applied in the same manner.

Among patients in the hospital, the treatment of exposed pulps was practiced to some extent and many teeth saved which would otherwise have been lost ; and whilst the paste is used in the office of nearly every dentist, the proportions are given for the reason that, its application having been attended with such uniform success, some might desire to test its efficacy. They are the following :

℞	Acid Arsenios,	gr. xxx.
	Morphiæ Sulphatis.	gr. xx.
	Kreosoti,	q. s.

The insertion of artificial teeth on plates was not included in the operations allowed. In some instances pivot teeth were inserted or readjusted, and in this connection it might not be out of place to mention a plan adopted by the writer for securing a more perfect adaptation of the tooth to the fang. It consisted of a piece of thin rubber introduced between the tooth and the fang in the shape of an "O," through which the pivot entered the fang. In readjusting these teeth, it was often the case that the fang after being filed, caused the old tooth to be so much shortened as to be useless, which in a time of great scarcity of materials was no trifling

consideration. By the use of the rubber the tooth was not only lengthened sufficiently to be used again, but it was found that *moisture was entirely excluded* as long as the pivot remained firm, thereby adding greatly to the preservation of the fang.

The experiment of dental surgery in hospitals having been received with such universal favor, dentists were assigned to the most important points throughout the Confederacy; and so convinced was the Bureau of Description of its importance, that notwithstanding the need of men for field service was more urgent than ever, no obstacle was interposed to their appointment. Thousands of men throughout the Southern States can attest to the benefits they received by its adoption, and it is confidently believed that had the necessity for its longer continuance existed, it would have led to the establishment of a regular Bureau of Dental Surgery, associated with the medical staff of the army.

Dentists of every land owe a debt of gratitude to a man who gave official recognition to the importance of their profession, and who extended to those under him every encouragement in the prosecution of their arduous duties; and no matter what differences may exist in regard to opinions honestly entertained, or a line of conduct dictated by a sense of duty, they owe more to Samuel Preston Moore, Surgeon General of the late Confederate States Army, than to any man of modern times.—*Am. Jour. Dental Science.*

DEODORIZING INDIA-RUBBER.

The extremely disagreeable odor attaching to india-rubber manufactures, and the power possessed by them of imparting a nauseous taste to liquids or other substances, has long been a difficulty in the way of its use for many purposes for which india-rubber is peculiarly adapted. To obviate this evil many expedients have been resorted to, but none hitherto with perfect success, and this on account of the strong tendency which india-rubber has to acquire and retain odors. The new process, invented by Mr. S. Bourne, depends upon the still greater affinity possessed by charcoal, especially animal charcoal, for all kinds of odors, and its great capacity for the absorption of gases. The practical difficulty lies in so using the charcoal as not to injuriously affect the articles with which it may be brought into contact, and this has now been overcome by very simple means.

The mode of application necessarily varies according to the description of articles which are thus treated. Generally speaking, they are laid in shelves or trays in a hot chamber, with a thin stratum of charcoal beneath and on top, and exposed to a temperature of from 120 to 180 degrees for from three to six hours, after which they are removed from the charcoal, having sustained no other alteration than the all important one of being rendered devoid of smell and incapable of imparting any taste to liquids or other substances they may touch. Under proper management the most delicate textures can be thus dealt with without being impaired either in substance or appearance. The most convenient mode of applying heat is by hot water or by steam surrounding the vessel or chamber in which they are placed. One very considerable advantage of this process is, that

for a large number of vulcanized articles it can be carried on in co-operation with the heating or curing by which the vulcanization is effected, and they leave the chamber at once free from odor. It is equally applicable to india-rubber in sheet, spread fabrics, or the garments or other articles made therefrom when fully made up, such as the ordinary "macintosh clothing," air and water cushions, etc. The use of this process enables the inventor to produce his "flexible diaphragms" (which were first brought before the public at the Dublin Exhibition, where they obtained a prize medal) in so pure a state that they may at once be used with the most delicate wines and other liquids. The diaphragm itself is a contrivance for the division of casks or other vessels into two separate chambers, by means of a flexible partition, which fits to the upper or lower part of the vessel alternately, or into any intermediate position, so that whatever the quantity of liquor contained within it, the air (though still exercising its pressure through the medium of the diaphragm) is separated from it by an impervious shield, and thus the injurious effects of exposure to atmospheric influence are altogether avoided, and any portion of the liquor may be withdrawn at pleasure, and as often as may be, without any admission of air to the remaining portion. In this way vessels of wine and beer are stated to have been actually kept in constant use for six and twelve months without any fermentation or formation of acid resulting. It is equally applicable to other liquids for domestic use or for medical or scientific purposes, the fluid remaining as completely secured as if the vessel were actually full.

An adjunct to this invention, and which admits also of independent use, is in the elastic valves, in two varieties—the one for giving vent to the products of fermentation, when desired; such as the carbonic acid gas generated by malt liquors, etc., the other for giving admission to air so as to enable the liquid to flow through the tap or other orifice. In the one case a circular disk of vulcanized india-rubber is made to cover a small opening through which the gas is free to escape, but meets in its passage with the india-rubber, which being forcibly held down round its edge is at liberty to become distended, and in so distending opens a number of very minute holes, which have been pierced through its surface. When the pressure is removed, the disk again becomes flat, and its orifices shut. The degree of pressure to be sustained before these perforations open is perfectly under control, and may be adjusted to any required degree.

In the other form a small cylinder of india-rubber, closed at its lower end, is drawn over a corresponding cylinder of wood with a hole through its centre, and then tightly bound at its upper edge. The india-rubber has a number of slits made in its substance, which (when any orifice through which the liquor may flow is opened) receives the pressure of air, and yielding to this, opens, so as to let the air enter the vessel in exactly the same extent as the liquor is withdrawn. When the flow of liquor is so stopped, the edges of the slits become drawn together; so as to prevent any escape of liquor or gas in a wrong direction. Should there be any pressure from within upon the surface of the india-rubber, this will only tend to a more perfect closing of the slits, and, thus, while affording sufficient ingress, altogether restrain egress.—*London Pharm. Journ.*, February, 1867, from *Journ. Soc. Arts.*

Summary of Interesting Dental Intelligence.

BY GEORGE R. WELDING.

NEW BASE FOR ARTIFICIAL TEETH.—Dr. G. F. J. Colburn, of Newark, N. J., has invented a substitute for rubber in dentistry, which promises to be of much value to the profession. It is in reality a cement of which the mineral asbestos is one of the ingredients. Asbestos is a very peculiar substance. It is exceedingly light, and so very fibrous in its nature that it may be spun and woven like cloth, in which condition it resists fire, water and many of the acids with complete success. Taking advantage of these natural qualities, Dr. Colburn has, by long study, discovered additional substances, which, when united, form an artificial base that possesses remarkable toughness, adherence, strength and lightness. The ease and freedom with which it can be molded is a strong recommendation. It can be readily applied to gold, platinum and other plates. We have seen some full sets of teeth on aluminum plates that were truly beautiful. This new base contains no ingredients injurious to the health of the mouth or system. It is not affected by acid secretions, is free from all taste, and is inodorous. We hope that its merit will be thoroughly tested. Patents have been allowed.

We clip the above from the *Scientific American*, but the thing has certainly not yet been brought to perfection. However, we wish success to the inventor, so that we can get rid of the restrictions imposed by the American Hard Rubber Co.

ALUMINUM.—The metal aluminum was discovered by Davy, and for many years the process of manufacture was so tedious and costly that it was never supposed that it would be anything more than a plaything and curiosity for chemists. Of late, however, new processes for its production have been discovered, and it is likely that it will be found very useful to the arts.

In this number of the *Quarterly* we give two processes for its manufacture, which exhibit the difference of twenty-five years.

The process of 1835 is as follows:—This metal is prepared by the action of potassium upon the chloride of aluminum in a porcelain vessel. The chloride of potassium is then washed from the mass in cold water, and the metal is left in small scales.

The process of 1860 is this:—Mix clay with twice its weight of ferrocyanide of potassium, and one and a half times the weight of the clay of common salt; raise to a white heat in a crucible for half an hour, and when cool dissolve out the soluble salts with cold water.

The objection to its use in dentistry is, that aluminum is soluble in common salt and water, and in various other substances which are used in the mouth. Aluminum is malleable, and is as easily hammered out and rolled as other metals. It is a pretty metal and will not tarnish; thus it is adapted for ornaments, shirt studs, &c. It enters readily into combination with other metals. Our French neighbors have made an ingenious

combination of copper and aluminum, which so much resembles gold in color and resistance to acids that many persons have paid the price of good gold for it. We have seen some fine specimens of it.

CODE OF MEDICAL ETHICS.—This little work has just been issued by Wood, of New York, and this revised edition has been adopted as a guide and text-book in morals and manners, by the American Medical Association. It should be studied and obeyed by every dentist who would have a knowledge of the rules which govern gentlemen in their daily intercourse in life.

MORGAN'S PLASTIC GOLD.—The members of the Odontographic Society have had this new material for filling under consideration. We commend caution on the part of dentists.

Dr. Darby said, speaking of the "plastic gold," that time alone will test its durability, and make known to us its real value as a material for filling teeth. Have abandoned *very* adhesive foil; found, to my sorrow, that there was danger in its use; fillings often present a very uneven appearance after a few weeks, and very much the same as in old amalgam fillings, though not in color. (I speak now of very adhesive foil plugs). Have used Watt's crystal gold for some time past in finishing; like it much better than foil. Have tried Lamm's shred gold; the first was very poor. Hope the plastic gold may equal its promises and our anticipations, when it will prove a great desideratum to the profession.

Dr. Stëllwagen has had six boxes of Mr. Morgan's plastic gold in use, together with some of Lamm's, Watt's sponge, and Eakin's foil. He had very nearly decided to use the plastic gold altogether, and had done so within the last week with some few exceptional cases where foil or sponge had seemed to yet have the advantage. He said, however, that if *forced* to restrict himself to the use of one kind of gold to the exclusion of all others, he would prefer to use the plastic, as it seemed to be in the state most favorable to the variety and diversity of manipulations required by the dentist. In working this gold he had noticed that oftentimes it could be wedged or condensed laterally like the non-adhesive foil. There was certainly in his hands a great saving of time in the introduction of the gold as well as the preparation, and he felt confident that a saving of from fifty to as low as twenty-five per cent. in time might be claimed. In using the larger pieces he frequently introduced them upon the point of the instrument. There seems to be but very little crumbling or sandiness, but does not appear to be any improvement in the working under water. It may be safely said that as our gold fillings are introduced at the present day, water may be always considered detrimental. The quality of the gold furnished to him seemed to have steadily improved; although he felt satisfied, that the longer it was kept on hand by him the worse it worked, unless carefully annealed.

Dr. W. H. Trueman desired to call attention to a point which, he thought, seemed (judging from the remarks made this evening) to have received very little notice or consideration. How far is a *dentist justified* in using a *secret* preparation? How far is it *professional* for him to use an article when the process of manufacture, and therefore its properties and the effects it may produce, are *unknown* to him? I make it a rule not to use

in the mouths of my patients any *secret* preparation whatever, no matter how well they may be recommended. I have a very *decided* objection to working in the *dark*. I do not think a dentist has any more right to use a secret preparation than a physician has to prescribe a remedy, the ingredients, properties, and possible effects of which are unknown to him.

Dr. Ellis thought we were almost as ignorant of the manipulation employed in the manufacture of foil. Had been informed by good authority, that impurities in foil had frequently occasioned its condemnation, although, to the vision alone, it presents nothing objectionable. He had heard others complain, and could himself testify to the unsatisfactory nature of the replies which were given by foil manufacturers to inquiries addressed by practitioners, touching the *modus operandi* of its manufacture. He had used Morgan's gold with great satisfaction for several months, and regarded it a very valuable material.

Dr. Harris hoped he would not be misunderstood, and that his remarks would not deter any one from giving the plastic gold a thorough trial, and he was and always had been in favor of the fair trial of every innovation tending to the advancement of the profession and the extension of its usefulness.

Upon motion of Dr. Henry, the Society then adjourned until the first Monday in September (Sept. 2d, 1867).

TRANSACTIONS OF THE BROOKLYN DENTAL ASSOCIATION, *May 15, 1867.*—*The Cleaning of Teeth.*—Dr. Horne said that cleaning the teeth, and teaching his patients to keep them so, is a professional duty none the less important because it is greatly neglected. We may fill our patients' teeth ever so well, but if they (untaught by us) suffer the causes of former decay to proceed without check, we may look soon to do our work over again.

Dr. Atkinson said that of all the operations miserably botched, that of cleaning teeth bore the palm for being execrably and atrociously bungled. There seemed to be no conception on the part of the mass of dentists as to what cleaning teeth implied; a little scratching and scraping satisfied them, and the patient is sent off in a worse condition than he was before. They plead that it don't pay to spend time over cleaning the teeth; but that excuse only proves that they themselves have no idea of the importance of what they are about. No teeth that need cleaning at all can be cleaned at one sitting; each individual tooth should be cared for separately, and no other attended to until the first is fully restored to its normal beauty. Give all the time to the case it demands for reaching the highest notch of completeness; imbue the patient with your own idea of what is attainable in his behalf, and with your own aim as high as it should be, there will be no higgling over a five dollar fee, but a generous willingness to compensate for the time and skill bestowed. If you chance to lose a bill or two, don't lay it to heart, but keep right on, and the reward will come somehow. Young dentists overslaugh such operations, and yet think their own services just as good and worth just as much as anybody's; and either take to charging prices which are entirely beyond their deserts, or to abusing those who have attained excellence through years of application and experience.

No young man ought to think himself fit to enter practice who has not had seven years of practical training.

Dr. Houghton said: I observe that chloride of lime, chlorate of potash, etc., are recommended for the bleaching of discolored teeth. I have used these preparations with some success; but of late have been using chloride of lime in connection with os artificiel, and find it works better than I anticipated when first conceiving the idea. The proportions used are about equal parts of the lime with os artificiel mixed with the liquid; the combination throws off a large quantity of chlorine, and chlorine is the active agent that bleaches. This may not be new to the profession, but I offer it for what it is worth. I find the os artificiel very beneficial in filling over *exposed pulps*. This may appear incredible to many, but I have tried it in a large number of cases where the patients could not wait for the pulps to be destroyed and extracted, *and have never had a case to trouble the patient in any way, except the slight pain when first introducing the filling, which seldom lasts longer than from fifteen minutes to one hour.*

REPORT OF THE DISCUSSIONS OF THE SOCIETY OF DENTAL SURGEONS OF THE CITY OF NEW YORK.—At the meeting of January 16th, Frank Abbott presented a second edition of his set of instruments, and explained their special uses.

C. B. Grout exhibited a syringe for injecting fistulæ.

Dr. Atkinson said the time was when dentists kept their improvements, whether in instruments, methods, or remedies, entirely to themselves, but happily that time is past, and we now see men hastening to share their good ideas with their brethren. With reference to instruments, he would say that he belived the ovoid point comes nearest his ideal for packing gold. It not only condenses the gold on a line with the force, but presses it out laterally. He arrived at this conclusion from using an ovoid bur at a time when the right-shaped plugger was not at hand. He objected to fish-tail pluggers with straight edges, preferring to have the edge rounded both ways. The sets called by his name contain many that neither he nor anybody else can use satisfactorily. He deprecated separating teeth with rubber because of the danger of periodontal inflammation, elongation of the tooth and death of the pulp. An eminent dentist of the West has done more harm than a little by this method of separating. We must have plenty of room and full control of the patient. Many a tooth is half filled or even removed rather than have inserted a contour filling which might be conspicuous in the mouth of the patient. This sort of taste he believed to be defective, and, certainly, destructive, hence we should labor to replace it by a healthier and more sensible taste. Concerning those who objected to welded fillings, he believed their objections unfounded, and their practice likely to preserve a far smaller proportion of teeth.

J. C. Robbins had employed the oxy-chloride of zinc for capping exposed pulps, and with the happiest effect. He now has in his mouth a tooth, which, he believes, contains a living pulp, but which had the pulp fully exposed five and a half years ago. The cavity was excavated and filled with the zinc preparation, which remained some three years. The cavity was then excavated more thoroughly (during which it gave unmistakable

evidence of being alive) and filled with gold, since which it has remained comfortable.

Dr. Fitch said the anchorages are often made in a slovenly manner. He invariably anchors with pits and slots or grooves. He would like to know whether the gentlemen generally deem such anchorages essential. If the first portions of gold are not so anchored, the filling will be liable to be moved during the process of its introduction, in which case it should invariably be removed, as it is hardly possible to make it entirely exclude fluids without this precaution. Prefers foil for filling the retaining points. Does not like to fill over softened dentine, and where the pulp is once quite exposed he thought it generally died, though there might in many instances, be no very palpable notification of its demise.

Dr. Atkinson has some instruments which he will exhibit to-night for effecting this object, to which they are admirably adapted. After the scalars have been used, the roughened surfaces should be gone over with pumice-stone on a stick of orange wood, leaving nothing to invite an immediate lodgment of fresh desposits. Stains upon the teeth may be removed by polishing with a slab of some fine-grained stone, to be kept wet while in use. Dilute acids are used and commended by some, followed immediately, tooth by tooth, with an alkali; but this is a dangerous practice.

To Correspondents.

A writer sends us a copy of a printed caution and asks, what he shall do? as Bacon & Co. threaten the penalty.

GOODYEAR DENTAL VULCANITE COMPANY.—CAUTION TO THE PUBLIC.—Notice is hereby given that the license granted Dr. —, of —, for the use of rubber as a base for artificial teeth, has been revoked. All persons are hereby cautioned against employing the above Dr. —, of —, in the above-named branch of dentistry, as by so doing they render themselves liable to prosecutions for infringement.

JOSIAH BACON,
Treas'r Goodyear Dental Vul. Co.

— —, 1867.

What shall you do? Give to the said Josiah Bacon security that you will pay him all dues, as soon as the courts *establish his right to his claim*. You would be doing wrong to your family and yourself by paying one cent before the *courts say you should*. This business is to be carried before the Supreme Court for a final settlement. We do not believe that the United States Supreme Court will sustain the claim of the Goodyear Dental Vulcanite Company; *because*, the length of time dentists have been using rubber, will, in the opinion of the courts, constitute a "dedication to public use;" and, *because*, it is never the policy of the law, to cripple the industry of a whole nation for the benefit of a few upon an exceedingly doubtful claim to a patent.

THE DENTAL QUARTERLY.

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PHILADELPHIA, DECEMBER, 1867.

No. 4.

CHANGE OF THE DENTAL QUARTERLY TO A MONTHLY PUBLICATION.

THE December number of the *Dental Quarterly* is the last which our subscribers will receive in its present shape. We will hereafter issue a *Monthly Dental Newspaper*, entitled,

THE DENTAL OFFICE AND LABORATORY.

The discoveries and improvements of the times succeed each other so rapidly, that the long delay of three months, renders it impossible to place them before our friends for examination and analysis, as often as is necessary. Hence we have been impelled to issue a *Monthly Journal*.

We want to make our paper a vehicle for the conveyance of information interesting and profitable to the Profession. We design making *Dental Correspondence* a feature of our new paper.

This form of publication will place us oftener in pleasant and close connection with our friends. It will enable us to place the ideas of the day before our readers at the time of their inception and development. It will enable us to give more information at less cost. Our subscribers with whom we have so often and so pleasantly communicated through the *Quarterly*, will, we believe, appreciate our efforts and continue the friendship, so gratefully received in the past. Subscribers, Inventors, and Advertisers, will find it to their interests to lend a helping hand to our *Dental Newspaper*. Communications of interest to the profession solicited, and, when used, will be paid for. Address

JOHNSON & LUND, *Publishers*,
27 N. 7th Street, Philadelphia.

GOLD FILLINGS.

FOR several years we were in the habit of using gold foil, in no other than its non-adhesive state, and introduced it in the form of wedges, formed from pieces of foil from one-half inch to one inch square. In medium

size cavities on the grinding surfaces when kept perfectly dry, this form of foil we think can be introduced much more readily and with less fatigue, with as good results as any other form of pure gold. We have an opportunity very frequently of seeing fillings inserted in this way, eight or ten years ago, and they invariably look as well as when first finished; and only need a little burnishing to resemble new fillings. We have found this to be the case too with approximal fillings in the majority of instances, many bearing well the test of time. The most difficult cavities to fill with soft foil, were on mesial and distal surfaces, requiring a filling about the size of a pin's head. These we are now enabled to fill with far greater ease by means of adhesive foil as it comes from the manufacturer, or with soft foil rendered adhesive by passing through the flame of a spirit lamp.

For the past year or two we have confined our operations, in a great measure, to adhesive foil; but unlike many, we have come to the conclusion that a conservative policy is the best. We say, unlike many, because we have heard it said, after the use of a certain kind of gold, "I do not know what I'd do if I had to use foil again." Now with large cavities, adhesive foil renders the operation very tedious, yet where the cavity is saucer shaped, soft foil cannot well be used; and therefore, just here, we must express our gratitude to the inventor of plastic gold,—for with such a material to aid us, our duties in these instances are rendered less wearisome, making in fact a comparatively easy operation. We would caution those who use either shred or plastic gold, to be as wary of the saliva as if they were filling with foil. We have recently removed the remains of a filling which resembled gold dust, and it is our belief, that the shred or plastic gold was placed in while wet, and hence this disintegration. We believe this, because in refilling with foil, although the upper eye tooth, we had to get rid of the mucous secretion by means of the wooden wedge. The other operator, probably regarding this material proof against a slight moisture from the gum, failed to make a perfect operation. With proper instruments and proper manipulation, a good filling may be made with it; but in the hands of a tyro, it can be abused as well as foil. In large approximal fillings, we have found it very useful. It also makes an excellent foundation for adhesive foil in cavities where it is desirable to finish with the latter.

For filling small cavities, we prefer, as we said before, adhesive rolls, on account of the ease in which they are introduced and made to unite or weld, piece to piece. We also use them frequently in badly shaped cavities, when by means of pits and anchorages, badly decayed teeth may often be restored to their original shape. There are still other cavities which can be filled with more ease by means of the old fashioned wedges.

With regard to amalgam, we still use it, and feel thankful that there is such a substance, although our text book regards it as "the most pernicious material that has ever been employed for filling teeth." We have not the least doubt however, that there are many who fill certain teeth with gold, out of respect for their hobby and for the sake of consistency, which would have subserved the purpose of mastication, ten times longer, if they had been filled with well washed and well pressed amalgam.

A. T.

A SUPERNUMERARY TOOTH.

DR. E. A. BIGGS, of Broadhead, Wisconsin, sends us a supernumerary tooth, which he extracted from the mouth of a German lad, about thirteen years of age. The patient had lost, two or three month previously, the left central incisor. The gum was thickened, red and considerably inflamed, with two or three spots upon its labial surface,—excoriated, with a constant exudation of pus, of a fetid odor. This, though small in quantity, was sufficient to attract the attention of a close observer. About half way between the edge of the alveolar border and the froenum of the upper lip, emerged the cutting edge of what appeared to be a new central incisor; while on the palatine surface, looking directly out of the mouth, was the point of a supernumerary tooth, of a conical shape, just visible. Dr. Biggs advised extraction. The operation proved to be an easy one. The apex of the fang was found in an abnormal state, shortened by absorption, with the nerve cavity very large and filled with a membranous sac. The patient stated that he had had no pain with it.



A. T.

The following from our friend Dr. Scott, relating to that much neglected, and much abused instrument, the File, will be read with respect. Too many wander off into wild theories. Let us speak of what we *know*.—
EDITORS QUARTERLY.

For The Dental Quarterly.

THE FILE.

I HAVE often wished that those who write about the file, as a dental instrument, would make themselves better understood. I cannot conceive how any man can practice dentistry upon the natural teeth without the file. As an adjunct to the instruments employed in the preparation of cavities to be filled, proper files are, with me, indispensable. Also, for preventing decay on approximal surfaces; or for removing that which is superficial only, I must have files; but I think, upon the whole; I use cut-

ting instruments more than the file, in trimming back the boarders of cavities.

I have often noticed suggestions like the following: "*Continue the use of the file until the caries is all removed;*" or, "*the file as a preventive of decay.*" Now all this cannot be otherwise than bewildering to the young dentist. I can remember when it was so to me. How can any file be used, in any case, to "*prevent decay*" in the grinding surfaces of molars, or the palatine surfaces of incisors; or how can the use of the file be "*continued until the decay is all removed,*" when the decay penetrates some depth below the enamel, such a use of the file the simplest mind can see would carry away, often, a fourth or a third part of the healthy portion of the tooth. In fact there are but few cases where the file can be made available at all to entirely remove the caries; and these are limited to the approximal surfaces; and then the caries must be very superficial indeed; for if it dips at all, we must employ cutting tools, and not the file. There is no necessity for removing any healthy portion of a tooth in order to get away the softened bone, merely. But of course we must undercut where it becomes necessary to anchor, or secure retaining points in filling.

Experienced operators of course do not require to be told anything about the use of the file, in any case, because the case itself suggests what is to be done, and what instruments are to be used. It is the inexperienced that need careful and intelligible advice.

And then again, take such quotations as the following: "*Thousands of teeth are sacrificed to a blind and overweening confidence in the operation of filling.*" "*Of the permanent preservation of the teeth by the file, which had been adjudged hopeless and incurable, so far as filling or any other operation could affect them, and which were filed, as the only expedient or experiment that could be applied.* We have seen in the same denture, part of the teeth lost under the best efforts of those most skilled in the operation of filling, and the remaining teeth, which had been abandoned as hopeless, a little mutilated it is true, but sound and healthy, and satisfactorily performing all the functions peculiar to these organs."

The article in the American Journal of Dental Science, from which the foregoing are quotations, contains some excellent suggestions; and I only allude to these remarks on the use of the file, for the purpose of calling attention to their utter ambiguity. I sincerely wish that writers would make what they do really intend to teach, more intelligible. For my own part. I have to say, that I arose from a most careful reading of the article, entirely confused. I am an advocate of the file; and use it liberally; far more so than any of my acquaintances; but how to restore teeth that have been "*adjudged hopelessly incurable so far as filling*" is concerned, and make them "*sound and healthy, performing all the functions peculiar to these organs,*" with the file alone, is quite foreign to my experience or conceptions. Thirty years of practice have not discovered to me any method of saving teeth, where decay has penetrated the dentine, besides successful filling. I know that we can cut away the softened bone in some cases, and that decay will be arrested, and the teeth remain in statu for long years and perform good service. But this of course must be done before the complication of an exposed nerve has taken place. And besides, it is our practice, and science requires it that we fill permanently and enduringly

every decayed tooth, where the operation is at all practicable; and such cases I have found few indeed.

H. D. SCOTT.

Lancaster, Ohio.

DECISION ON THE RUBBER PATENT.

Henry B. Goodyear and others *v.* Thomas G. Wait.—This was a case in equity to restrain the defendant, who was a dentist, from an infringement of the invention of Nelson Goodyear in the manufacture of vulcanized India-rubber. The facts of the case are substantially these:—In the year 1851, May 6, a patent was issued to Nelson Goodyear for an improvement in the process of Charles Goodyear, in preparing India rubber. The latter having taken out a patent in June of 1841, for a new process of vulcanizing India-rubber, which was reissued in December, 1849. Nelson Goodyear's improvement consisted "in thoroughly mixing the rubber with sulphur, whether with or without auxilliary ingredients, in the proportion of about four ounces to a pound of sulphur to a pound of gum, and then subjecting the same to a high degree of heat, as in the vulcanizing process of Charles Goodyear, until the compound shall have acquired the hard, tough, and and springy property." This first patent of Nelson Goodyear was surrendered, and reissued May 10, 1858, for a defective specification. On the surrender two patents were issued, one for the process and the other for the product or new manufacture.

In the year 1854-5, afterward in 1857-8, the subject of the application of this compound of hard rubber to dental purposes engaged the attention of the proprietors, and in 1857-8, the application for these purposes having become perfected, agencies were established for the vulcanization of dental plates in the city of New York, and elsewhere, and public notice given of the same to the profession. These plates were made by mixing the compound with a certain proportion of vermilion. Infringements were immediately commenced, and some suits were brought to restrain such infringements, and various steps were taken to secure the rights of the patentees to this use of the article in dentistry. The defendant was a dentist, and was charged with having used this hard rubber in making and selling plates for artificial teeth.

The defendant contested the right of the plaintiff upon the following grounds: 1. He claimed that the reissued patents were void for want of authority in the Commissioner of Patents to issue them, on the ground that the process and the product which were described in the original patent both being new, constituted but one invention, and that the claim for either in a patent would cover both, and the case was, therefore, not one in which a reissue was allowed. 2. He claimed that the patents do not describe the invention in such full, clear and exact terms as to enable any one of ordinary skill in the art to make the hard rubber without experiment or further invention. 3. He claimed that as respected the use of the compound for dental purposes it had been dedicated to the public.

Held by the Court—First—That though it was held in *Goodyear v. The Railroads* (2 Wallace, 360), that the process of Charles Goodyear in vulcanizing India-rubber embraced the new product, it does not follow that the claim for the product will protect the process; that where by a new

process a new product is produced, the inventor is entitled to the allowance of both claims; that though both might have been in this case properly embraced in one, yet that is a question very much left, and reasonably so, to the good sense and discretion of the Commissioner; and that the original patent was properly surrendered to amend the claim, and that the re-issue of two patents was unobjectionable.

Second—That the question as to the description in the patent was one which the Court had considered in the case of *Goodyear and Poppenhusen v. The New York Gutta Percha and India Rubber Vulcanized Company*, in October, 1862, and it was there held that the description in the patents, both as respects the proportion of sulphur and rubber, and as to the degree of heat necessary, was sufficiently full and certain within the requirements of the present law; and that the proofs in the present case confirm the correctness of the former decisions.

Third—That on the facts no dedication of the patent to the public is shown. The owners of the patent, besides having agencies over the country and published in a quarterly called the *Vulcanite* a list of their agents, with notice that they would furnish the compound to licensees only, and sold the compound in many places put up in boxes, in the label on which was a notice that it was only to be sold only to licensees, and the defendant being examined as a witness admitted that he bought his compound at one of the Company's depots, in boxes having that label, and that in 1864 he was called on to take out a license, and declined on the ground that licenses were not protected, and that he had seen circulars warning against infringements, and was aware of suits against infringers, and that the defendant's own testimony is abundantly sufficient to repel the conclusion of dedication as to himself.

Decree, therefore, for complainants, with a permanent injunction and a reference to the Clerk to ascertain damages.

For plaintiff, Messrs. Stoughton, Kellar and Blake; for defendant Messrs. Curtis and Law.

Our Dental friends at a distance, will see that we are not neglectful of their interests by publishing the above. The matter will be finally adjudicated in the Supreme Court at Washington, D. C., when we trust the above decision will be reversed.—EDITORS QUARTERLY.

EXTRACT FROM A PRIVATE LETTER FROM PARIS.

PARIS, October 1, 1867.

MESSRS. ———:—Whilst visiting the Exposition at this city, my attention was attracted by the case of artificial teeth exhibited by Messrs. Johnson & Lund, of Philadelphia, which although composed of a small and modest assortment, unsupported by other dental goods, commanded attention by their intrinsic merits and the peculiar beauty and natural appearance of the gum enamel. The squareness of the flange at the edge of the block allowing so close a jointure as to cause the seam to be almost imperceptible, the texture of the body with its dense creamy, yet translucent appearance, the variety of shades of the enamel, the blending of the brown-

ish yellow at the heel, with the light grey of the cutting edge, combined with the neat arrangement on pink wax cards and blocks of the same material, gave them an appearance not surpassed by any others exhibited. The judges showed their appreciation of true worth, by presenting one of the medals to the above Firm; and it is evident that it needs but little perseverance to place them in the front rank of manufacturers of their goods.

Yours, &c.,

A. M.

Proceedings of Dental Societies.

WE present to the reader all that is of value since our last number of the *Quarterly*. There is much that is useful in these "proceedings" if we separate the wheat from the chaff.

Reported for The Dental Quarterly.

ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA, September 9, 1867.
Dr. W. P. Head, President.

Professor Allen said:—It was a matter of considerable moment to ascertain to what extent and how the different races of men are affected by the combined influences of the climate, soil, and food, not only so far as their physical powers are concerned, but, in addition, the intellectual and moral attributes. For every observing mind must be impressed with the fact that, single or combined, they do exercise a powerful influence upon the condition of man. One of the most marked evidences of the modifying influences of food was presented by the size and form of the jaws, *being large and full in those feeding upon coarse food, and diminutive and not unfrequently misshapen* in those who, by indulging in *soft food*, fail to give the maxillæ exercise.

Dr. Arrington, 18 years in practice of Medicine and Dentistry in the South, said:—That the teeth of the negro race are inferior in quality, and, after adult age, are more liable to decay than those of the white race. The teeth of the mulatto mixed bloods (white and black) are more defective after adult age than either the white or black race. That the jaws of the black race are uniformly more perfectly developed than the white race, and the teeth set more evenly in the jaw; but there was rarely any malformation of defective structure of the dental organism; the mulatto less perfectly developed than the whites, yet freer from extreme deformity. The first set of teeth with negro children are more evenly set in the jaws, less crowded, and suffer less from decay than the whites or mulattoes, and continue better to adult age. Negro children suffer less from teething than white children. Also, the children of the poorer working classes of the white population in the country suffer but little compared to children of parents in higher life, proving evidently to his mind that the practice of confining infants to breast-milk as a diet until twelve or eighteen months old (as is often advised by some of the best and most distinguished practitioners of medicine in our country), is contrary to common sense, reasoning, and physiology, and destructive to life. In his judgment, the sooner children commence to masticate food the better it is for their health, com-

parative freedom from suffering while teething, and the general development of their jaws and teeth.

Dr. Head has found the teeth of negro house-servants generally much worse than those of the field laborers, which he attributed to their more delicate food, which required less mastication.

Dr. Stellwagen said :—There is yet another cause for narrow misshapen jaws, and I am sorry to say that this is caused by the unwarranted interference with nature, by men who *call themselves* dentists, who from greediness or ignorance, commit butcheries upon their patients, and entail upon their patients defects in speech, appearance, and health.

Society adjourned to meet on Monday, October 7, 1867.

ODONTOLOGICAL SOCIETY OF NEW YORK.—The first annual meeting of this Society was held October 8th. The following gentlemen were chosen officers for the ensuing year: President, Dr. C. E. Francis; Vice-President, Dr. W. B. Hurd; Recording Secretary, Dr. Thos. Burgh; Corresponding Secretary, Dr. W. C. Horne; Treasurer, Dr. G. U. Perine; Librarian, Dr. W. Carr; Executive Committee, Drs. A. L. Northrup, E. A. Bogue, W. C. Horne.

This Society is incorporated by the State of New York; its objects being to cultivate closer professional relations among its members, to extend their knowledge of the arts and sciences bearing upon dentistry, to maintain a high standard of excellence in dental art, to interest and instruct the public in dental hygiene, and to secure a higher appreciation of the aims of the dental profession. The plan of the Society includes the design of securing a corps of active correspondents, in different localities, through whom an interchange of views will be maintained on topics of immediate professional interest. Communications will be received by the Corresponding Secretary, and presented at the regular meetings—to be held for the present, at the houses of members, on the second Tuesday of each month. Professional friends from other cities will be welcomed at these meetings, on introduction by some member in good standing. Corresponding members will be promptly notified of the subject to be discussed at the next meeting, in order that they may have opportunity for preparing their communications in good season. It is designed to preserve the transactions of the Society in permanent form, and the co-operation of the members of the profession is desired to insure an annual publication worthy of American Dentistry. The next regular meeting will be held on the second Tuesday of November, at the residence of Dr. E. A. Bogue, 28 East Twentieth Street, New York. The subject of discussion will be: "The Physiology and Hygiene of Foods in their Relation to the Dental Organism."

Reported for The Dental Quarterly.

SUSQUEHANNA DENTAL ASSOCIATION, held its fourth annual meeting at Wilkesbarre, on July 17, 1867. Dr. H. Gerhart was re-elected President for the ensuing year; Dr. Williams, Vice-President; Dr. Dodson, Corresponding Secretary; Dr. Beck, Recording Secretary; and Drs. Reun, Barrett and Wingate, Executive Committee. An address was delivered by Dr. Gerhart. The death of Dr. W. A. Chittenden, of Scranton,

was announced by Dr. Beck. Committee appointed to draft proper resolutions. Next meeting to be held in January next at Milton. Subject for discussion, Functions of Teeth in their Relations to Digestion. Essayists—Drs. Foadham, Burlan, Williams, Barrett, Sleeker and Wingate.

Reported for The Dental Quarterly.

DELAWARE DENTAL ASSOCIATION, held its first annual meeting at Dover on the 13th of June, 1867. At an election for officers, Dr. Smith was elected President, Dr. Register, Vice-President, Dr. S. Marshall, Corresponding and Recording Secretary, Dr. Jones, Treasurer, Dr. Caulk, Librarian.

After many essays were read, a Committee was appointed to prepare a bill for the regulation of the practice of dentistry in Delaware, to be presented to the next meeting of the Society.

Reported for The Dental Quarterly.

MAINE DENTAL SOCIETY.—The Maine Dental Society held its second annual meeting in Portland. Voted that the next meeting be held in Lewiston, on the third Tuesday in March. Dr. I. J. Wetherbee of Boston, occupied the close attention of the Society during the evening, with a lecture on filling approximal cavities in the teeth, filling nerve cavities, and treatment of alveolar inflammation and abscess.

Wednesday.—The Society met at the office of Dr. Evans, and witnessed clinical operations by Drs. Wethersbee and Salmon, after which they assembled again at 10 o'clock and listened to further remarks from Dr. Wetherbee, on Filling, and from Mrs. Wetherbee, on *Chemical Affinity*.

NEW ORLEANS DENTAL COLLEGE.—The profession in the South will be pleased to know that a Dental College, with the above name, has been established in New Orleans. The regular course of lectures will commence on the first Monday in November, 1867, and continue four months.

NORTHERN IOWA DENTAL ASSOCIATION.—In compliance with a call issued by Drs. C. Poor, of Dubuque, A. B. Mason, of Waterloo, J. S. Nicholson, of Anamosa, and others, a number of dentists met at Dyresville, September 17, 1867, for the purpose of organizing a Dental Association for the northern part of Iowa.

Dr. Poor being called to the Chair, Dr. Mason acting Secretary, a Constitution and By-Laws were reported and adopted. The following officers were elected for the ensuing year: President, Dr. A. B. Mason, of Waterloo; Vice-President, Dr. E. S. Clarke, of Dubuque; Corresponding Secretary, Dr. E. Noyes, of Dubuque; Recording Secretary, Dr. A. H. Gill, of Independence; Treasurer, Dr. C. Poor, of Dubuque.

The following Standing Committees were appointed: *Executive Committee*, Dr. E. S. Clarke, of Dubuque, Dr. J. T. Abbott, of Manchester, Dr. C. Poor, of Dubuque. *Committee on Membership*, Dr. E. Noyes, of Dubuque, Dr. John Nicholson, of Tamar City. *Committee on Dental Ethics*, Dr. J. H. Bowers, of West Union, Dr. D. H. Gill, of Independence, Dr. J. T. Nicholson, of Anamosa.

The time was then occupied in discussing various subjects pertaining to the practice of Dentistry. Adjourned on the 18th to meet at Cedar Rapids on the second Tuesday in June, 1868.

MEMPHIS DENTAL SOCIETY.—On the fifth day of September, 1866, the Dentists of Memphis met, by general agreement, at the office of Drs. Hinson & Harris, for the purpose of forming a Dental Society, at which time a committee was appointed to draft a Constitution and By-Laws.

On the second of October they reported the following

PREAMBLE. *Whereas*, The exigencies of the times; our duty to the Dental Profession, to ourselves, our patrons, and to posterity, demand that we should do all in our power toward perfecting ourselves in our profession, and aid in advancing it to that standard of eminence and dignity which belongs to it, as to other scientific pursuits, and

Whereas, We believe this can be best accomplished by union and harmony among members of the profession, with a frank and free interchange of facts and ideas, therefore,

Resolved, That to further these objects, we form ourselves into a Dental Society, and pledge our best efforts to promote its interests, with a generous emulation of "who can best work and best agree."

The Constitution which was adopted, was sound and wholesome, and will exert a salutary effect upon the profession, in Memphis.

SEVENTH ANNUAL SESSION OF THE AMERICAN DENTAL ASSOCIATION.—We make some extracts from the doings of this body. In noticing the claim of the Goodyear Vulcanite Company, the Association gave the cold shoulder to Josiah Bacon & Co., thus :

We hope this action of the Association will deter every member of the profession from being governed by the resolutions of the Boston meeting, and *that none will give material aid or encouragement to any unjust demands of incorporated companies, whose pretended rights are considered valueless by many of the best legal minds of the country.*

At the afternoon session, second day, the report of the special committee on the disposal of the proceedings of the Association was offered. It recommended that they be published in the dental journals. This resolution elicited considerable discussion, pro and con, several desiring that the Association should publish its transactions as heretofore. The report was finally recommitted.

That much more good could be accomplished by the early publication of the essays and transactions of the Association in our different dental journals has always been our belief; that it would tend to increase their interest and circulation, while it would encourage the writing of essays, as much of the value of papers now offered are lost by their tardy appearance and limited circulation in the profession.

The subject of Dental Chemistry and Dental Pathology and Surgery occupied the attention of the Association during the remainder of the afternoon.

Most marvelous cases were detailed at the evening session, on the subject of transplanting teeth; several stating that after teeth had been out of their sockets for considerable time, they had replaced them, and that union had taken place, *the dental pulps being alive years afterwards.* We thought how unfortunate that these gentlemen did not live during the time of the French revolution, as possibly they might have induced "im-

mediate union" between the heads and trunks of the luckless victims of the guillotine.

Niagara was selected for the next place of meeting out of several places named.

Dr. John Allen then read an exceedingly interesting paper on the Physical History of Various Nations of the Earth, with special reference to their teeth.

Dr. Allen's paper embraced a cursory review of the character and condition of the teeth of various nations, and commenced with asking two questions, viz.: Are not the teeth of Americans worse than those of any other people? What is the cause? Some nations keep their teeth till old age, and lose them as rarely as they do their arms or limbs. In this country, twenty millions of teeth are lost annually from decay. In examining the cause of this loss, it may be stated that the inhabitants of Europe who discard the mineral elements of food, are liable to lose their teeth by decay. The Albanians live on milk, cheese, eggs and boiled maize. Their teeth are fine, and remain good to old age. The mountain tribes of Asia, especially the Tartars, have strong, white teeth. The teeth of the Arabs are white and regular. They eat seldom, and never of animal food.

Dr. Allen next mentioned the inhabitants of the East Indian Islands, Zealanders, &c., as having good teeth, which lasted to old age.

The American Indians, as a general thing, had good teeth, which are large, never decayed, although worn, as in old age, by use. The Chilians, Californians, and inhabitants near the bay, all have fine, well-set teeth. Their diet is farinaceous. The inhabitants of Peru and Patagonia have beautiful teeth, even in old age.

With regard to the bad teeth of Americans, it would be said by the candid dentist, that they were set in narrow, contracted jaws, and were badly decayed. Humboldt said of the Camas, that they had fine teeth, like all people who lead a simple life. No nation that changed their food from the condition in which nature furnished it, had good teeth. Plenty of exercise and fresh air was another cause of the good teeth in the swarthy races.

We have attempted to improve our bread by bolting the flour, but thereby destroy the mineral elements which go to form the teeth. There are 13,868 mills in the United States: 27,000 men are required to work them, and it requires nearly \$9,000,000 annually to change the constituents of our food, and the result is undoubtedly one of the most prominent causes of the destruction of Americans teeth. Lime is to be found in the outer portion of the grain, and it is needed for the teeth, yet we reject it. It is for the profession of dentistry to do good, by diffusing such knowledge as comes to it through experience and research, to prevent the evil of premature decay and loss of the teeth.

Dr. Allen's paper gave evidence of laborious investigation and research, and will be of value for future reference. It was referred to the Committee on Publication.—*Dental Times*.

WHICH IS BEST, ADHESIVE, SEMI-ADHESIVE, OR NON-ADHESIVE FOIL?—In a conversation had, on the valuableness of the Foils with different adhesibility, at the meeting of the Pennsylvania Association of Dental

Surgeons, May, 1867, Dr. Darby apologized for not being prepared with a paper but made some general remarks on the subject he had intended to write upon, that of "Gold Foil and the mode of using it." Gold foil, in his judgment, was not entirely pure. That for dental purposes should be as free from alloy as possible to get it. The various modes of preparing foil was then briefly alluded to, the rope, tape, cylinder, &c. He had recently adopted more of the cylinder and tape form in his practice than formerly. He had nearly abandoned the use of adhesive foil, as he had found it to scale, and in time became very defective. Considered cylinders as one of the best forms for filling cavities.

Dr. J. Truman remarked that he was astonished to hear the remarks in opposition to the use of adhesive foil from the gentleman offering the introductory remarks. To adhesive foil we owe the present advanced position occupied by the operative department. In his judgment, formed after an extended experience in the use of all the different forms of foil, he was satisfied that to ignore the use of adhesive foil was equivalent to abandoning teeth to entire destruction that could alone be saved by its use. It was exceedingly discouraging after the many years of labor, mental and physical, devoted to filling teeth by some of the most advanced minds in the profession, that we should find this constant effort to resuscitate modes long since condemned as ineffectual for general work. He believed one great difficulty in the use of adhesive foil had been that it had been used without a proper judgment of its capabilities. It was often impossible to use it at the edges of cavities, always used at this point with some risk, as there was always more or less uncertainty as to the perfect adaptation of the foil to the wall. He therefore preferred foil for this portion that possessed slight adhesive qualities, while for centres of cavities this peculiar property might be carried to its fullest extent.

Dr. Barker was satisfied adhesive foil had been a most powerful lever in the advancement of the profession to its present position. He could not comprehend why it was that every year we were obliged to go over the same subjects, and discuss modes of practice that had been long settled as inadequate to meet the demands of the present time. He considered the superior work now done with adhesive foil as the best answer that could be given to those who thought of returning to the use of non-adhesive foil. He had used Lamm's gold, but had not been able to work it under water, a quality claimed for it by those who introduced it. Had used Morgan's plastic gold, introduced by Hall & Ellis, and considered it valuable.

Dr. J. D. White read a paper on "Glasses in Dental Operations." He disapproved of strong light, but considered glasses of proper magnifying power a benefit, and Drs. Barker, Buckingham, Githens and Truman, gave their views on this subject. The general conclusion seemed to be, that the light in dental operations should not be too strong, neither should it be too much diffused over the operating-room; but should come direct to the point where it was most required.

At the meeting of February, 1867, Dr. H. M. White presented a paper on "The Growth of the Alveoli in Regulating Teeth." The aim of this paper was to prove that a deposition of bone takes place in the socket of

a tooth when the tooth has been forcibly moved from its original position. This view has been controverted by distinguished authorities; but the Doctor was satisfied, from long observation, that hypertrophy could be produced, as well as atrophy. The discussion that followed the reading of the paper took in its range the whole subject of regulating teeth, and was participated in by Drs. H. M. White, Githens, Wert, Buckingham, Wildman, W. H. Trueman and J. Truman.

Dr. W. H. Trueman presented a singular specimen of a tooth with an abscess at the centre of the fang, from which a minute perforation extended through the cementum and dentine to the pulp cavity.

At the meeting of March, 1867, Dr. W. H. Trueman read a paper on "Articulation of the Teeth." This article contained many points of interest on the arrangement of artificial teeth, taking some positions not generally held, in regard to the best mode of setting teeth in their relations to the alveolar ridge.

Dr. Wert followed in some remarks in continuation of the subject. He was satisfied that teeth arranged on the lower jaw, with an inclination inward, added materially to the firmness of the piece in the mouth.

Dr. Buckingham thought there was danger in setting teeth too far out. Agreed with the author of the paper read, that grinding off the prominent points of artificial teeth was a benefit. To procure a correct "bite" in arranging the preliminary steps for an artificial set, he invariably requested the patient to swallow, the tendency of which was to throw the jaws in natural position.

Dr. Barker had found great benefit from the use of "plumpers"—extension of rubber to throw out the cheek—when there was an inclination to bite the cheek in mastication.

Dr. Pierce stated that some dentists invariably bring the points of their teeth to a flat surface, grinding them off until all points are obliterated. He did not believe that plates were held up by suction entirely; patients accustoming themselves to retaining the piece in place, to a considerable extent, by the aid of the tongue.

THE NEW ANÆSTHETIC.—A few days ago we published an account of the new anæsthetic, bichloride of methylene, which has been discovered by Dr. Richardson, of London, and which is said to altogether banish pain in surgical operations. In the course of some further remarks on the subject in the London papers, the doctor states that he has been investigating the condensing power of the pulmonary surface for gases and vapors. He believes that all gases and vapors which enter the blood by the lungs are condensed by the pulmonary surface into a liquid state previous to absorption, and this physiological result he finds to be in curious accordance with the condensation of gases by platinum and colloidal substances. Dr. Richardson says that if the condensing power of the lung be proved, it will afford an explanation of some interesting and difficult physiological problems.

MARRIAGE BETWEEN BLOOD RELATIONS.—Dr. A. Voisin, Physician to the Bicetre Hospital in Paris, has contributed to the Memoirs of the Society of Anthropology a memoir on this interesting subject, in which he takes opposite ground to that usually occupied by medical writers on this

question. He made his inquiries in the little French village of Batz, in which the whole population is more or less related by ties of blood. Rejecting all but the intermarriages between persons nearly allied, he publishes the results of his inquiries with the results of 46 marriages, 5 between first, 31 between second, and 10 between fourth cousins. In these he finds none of the unhappy consequences so eloquently described by other writers. There were among the offspring of these marriages no malformations, no mental disorders, no idiocy, cretinism, albinism, deafness, dumbness, nor epilepsy. Scrofula existed in but one young girl. Barrenness is almost unknown. Two only, third cousins, were childless, and the other 44 pair had 174 children, an average of about four to each couple.

The children were lively, cheerful, active and more than usually intelligent. The inhabitants of the village are usually long-lived, preserving to the end a good degree of bodily and mental vigor.

The conclusion he arrives at is that where no tendency to hereditary disease or morbid diathesis exists, the marriage of cousins does not deteriorate but rather improves the race.—*London Lancet.*

Dental Ingots.

THERE are 8,579 dentists in the United States.

TWENTY million human teeth are annually lost by decay and accident in the Union.

DR. TRUMAN in the *Dental Times*, estimates that one half of a ton of amalgam is annually used in filling teeth in the United States. Is no one salivated? Freshly cut shavings of block tin, make a better filling than tin foil.

WHEN gold foil is annealed, it should be done thirty minutes before being used.

DR. REED exhibited to the *American Medical Institute* in Philadelphia, a bone with three molar teeth upon it, which was taken from an ovarian tumor. The woman had never been pregnant. The *Medical Investigator* relates this.

DR. HOUGHTON writes that he has used the new alumnium base, and finds it far inferior to rubber. It is soft, and warps.

WHO WANTS THE REWARD?—A writer in the *Scientific American*, offers \$1,000 to any inventor who will put a permanent enamel on his front teeth. They are filled on the face. A fortune for some one in this direction.

A WRITER in the *Druggists' Circular*, says that dry clay is the best substance known for destroying foul smells.

DR. KENNICOTT reports three cases of mercurial poison from the wearing of rubber plates. It was inferior rubber. It may have been from mercury taken twenty years ago.

DURING the late trial of the case of Goodyear v. Wait, for infringements of rubber patents, T. R. White, swore that in 1862 he sold 1,500 pounds

of rubber, in 1865, 3,150 pounds, and in 1866, 4,120. Now as a pound of rubber will make eighteen plates, we find that in one year there were sold 74,160 plates.

SYPHILIS.—A French paper gives a statement how a whole community of workmen became affected by this horrible disease, from drinking out of vessels in which a dirty man in the factories had drank. The virus had passed through their systems. Loathsome effects of vice.

TO BEAUTIFY THE TEETH.—Dissolve two ounces of borax in three pounds of boiling water. When nearly cold, add one teaspoonful of spirits of camphor. Bottle and keep for use. Take a tablespoonful of this and mix with an equal quantity of warm water, and apply daily with a soft brush. An excellent wash for the teeth and gums.

A REPLANTED TOOTH.—The following case was reported by Dr. H. at the late meeting of the American Dental Association. It is peculiarly interesting, and the more so, as it is reported from careful record and observation. W.

“At the request of Dr. Watt, I put upon paper a short report of a case verbally reported by me at last meeting of the ‘American Dental Association.’

“August 13, 1857, Mrs. R——, aged eighteen years, came to my office to have the first right upper molar tooth removed. By taking hold of my hand and moving her head, she shifted the instrument so that instead of the molar I extracted the second bicuspid, a perfectly sound tooth. Then I extracted the aching tooth; but the patient being so much annoyed by the loss of a perfect tooth, I concluded to replace it, which I did, after it had been out of the mouth about ten minutes. I first removed the ragged portions of the periosteum from the root; then thoroughly cleansing the socket with pledgets of cotton and tepid water, I returned the tooth, closed the mouth and bandaged it to hold the tooth in place. I treated it in the usual way till the tooth was sufficiently firm in place to remove the bandage, which was in about three weeks. I saw the case occasionally for two weeks longer, when I dismissed the patient. I saw her every few months since, but heard no complaint, until about six months ago she came to me with the *same tooth aching from exposed nerve.*”—*W. M. Herriott, in Dental Register.*

Obituary.

DIED at his residence in Williamsport, Lycoming Co., Pa., Dr. L. D. Eveland, in the thirty-ninth year of his age. The disease to which he fell victim was pulmonary consumption. He had been in delicate health for several years, but during last summer and fall he was very much prostrated by the cares and troubles incident to a lingering sickness and final death of Mrs. Eveland, from which he never entirely recovered.

Although feeble himself, he attentively watched her bedside always with a cheerful smile, caring for her wants, never murmuring or complaining of his own health, though almost as near the grave himself as the one to whom all his remaining energies were directed to relieve.

He was highly beloved and respected both for his professional ability and social qualities.

He was among the best operators, as well as a finished mechanical manipulator, taking great pride in excelling in every department of his profession, which secured him a large, and lucrative practice.

Answers to Correspondents.

R. D. C., OF STOCKTON, CALIFORNIA.—Your tickets for a course of instruction at our Philadelphia Dental Schools, will cost you about \$135. You can get board for from \$5 to \$8 per week. In Baltimore it is more costly. We decline to direct you to any particular college.

Our Book Table.

Essentials of the Principles and Practice of Medicine, a Hand-Book for Students and Practitioners. By Henry Hartshorne, M.D., Professor of Hygiene in the University of Pennsylvania, Auxiliary Faculty of Medicine, Professor of Physiology and Hygiene in the Pennsylvania College of Dental Surgery, &c., &c. Philadelphia: Henry C. Lea.

The above is one of the most valuable works for the busy Physician and Dentist, that has ever been issued. Its small size and clearness of conception and statement, make it indispensable to all who wish to obtain a comprehensive summary of special and general pathology. The author's application of therapeutics to diseases, based on sound, proven, facts, makes this "hand-book" a necessary daily companion to the practitioner, in his walks. The book is what it claims to be, a statement of facts and principles, as taught and practiced by the guiding minds in the Medical Profession. Our young dental friends who are about entering upon their duties, cannot obtain a more suitable counsellor than this little work of Dr. Hartshorne's.

The Half-Yearly Abstract of the Medical Sciences, being an Analytical and Critical Digest of the Principal British and Continental Medical Works published in the preceding six months, Vol. xlv. Jan.—July, 1867. Philadelphia: Henry C. Lea. \$2 50 per annum in advance.

Every medical gentleman will be pleased that the temporary suspension of this standard semi-annual has ceased. All will hasten to renew their subscription to this excellent summary of medical news. In no other shape can the student secure so much information as in our old friend the Half-Yearly Abstract.

The Humboldt Medical Archives. A Monthly Journal of Medical Sciences. Edited by A. Hammer, M.D., and M. A. Sallen, M.D., and co-edited by the Faculty of the Humboldt Medical College, St. Louis, Mo. Vol. i. No. 1. \$3 per annum in advance.

A rather pretentious journal, devoted to what the editors call "rational medicine."

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